Concept of Mental Health and Wellbeing, Determinants and Coping Strategies

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Introduction

Over the years besides the focus on the mental disorders, the focus has shifted to the mental health and well-being. In contrast to the mental disorders, the concept of mental health and mental well being is important for everyone in the society. World Health Organization (WHO) defines health as *"a state of complete physical, mental and social well-being, not merely the absence of disease"* (WHO, 2020) [1]. Accordingly, it can be said that since the beginning WHO has integrated the concept of well-being in its definition of health.

Three core concepts crucial to enhancing health emerge from the definition of health as per the WHO. [2] These are mental health is an intrinsic component of overall health, mental health encompasses more than just the absence of illness and mental health is intricately intertwined with physical health and behavior.

Defining mental health is crucial, but it is not necessarily required for its improvement. Value differences between countries, cultures, classes, and genders may appear to be too significant to allow for agreement on a definition. However, just as age and wealth have many diverse manifestations worldwide while maintaining a basic common-sense universal meaning, mental health can be defined without limiting its interpretation across cultures.[2]

The WHO defined mental health as:

> ***A state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to contribute to his or her community.It is a crucial element of health and well-being that supports both our individual and group capacity to decide, form connections, and influence the world we live in. [3]***

These WHO definitions differentiate between subjective happiness or life satisfaction (hedonic well-being) and positive psychological functioning (eudaimonic well-being).[4]

American Psychological Association describes the concept of mental health as follows [5]

> ***Mental health is a state of mind characterized by emotional well-being, good behavioural adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life.[5]***

While this definition represents significant progress in moving away from the conceptualization of mental health as the absence of mental illness, it raises several concerns and lends itself to potential misunderstandings by identifying positive feelings and positive functioning as key factors for mental health.[6]

Researchers and health organizations acknowledged the difficulty in reaching a consensus on mental health due to cultural variations and sought to construct an inclusive definition while avoiding restrictive assertions. While it was commonly understood that mental health is more than the absence of mental disease, there was no universal agreement on equating mental health with well-being/functioning, resulting in a definition that includes a wide range of emotional states and "imperfect functioning."[6]

The proposed new definition by Galderisi et.al stat that- ***Mental health is a dynamic state of internal equilibrium that enables individuals to use their abilities in harmony with the universal values of society. Basic cognitive and social skills; ability to recognize, express and modulate one's own emotions, as well as empathize with others; flexibility and ability to cope with adverse life events and function in social roles; and harmonious relationship between body and mind represent important components of mental health which contribute, to varying degrees, to the state of internal equilibrium.***[6]

Concept of Positive mental health

It has been conceptualized as a positive emotion that leads to a feeling of happiness. The personality traits of people having positive mental health include psychological resources of self-esteem, mastery, and resilience which is the capacity to cope with adversity and to avoid a breakdown when confronted by stressors. Such people have the capacity to master their environments, they have the ability to identify confront and solve problems. Mental health is clearly influenced by cultural socioeconomic and political situations.[2]

Mental health has intrinsic values as described below. [2]

- Mental health is critical for an individual's well-being and functioning.
- Good mental health is a valuable resource for individuals, families, communities, and nations.
- Mental health, as an integral component of overall health, contributes to societal functions and has an impact on overall productivity.
- Everyone is concerned about mental health because it is generated in our daily lives in our homes, schools, workplaces, and leisure activities.
- Good mental health contributes to a society's social, human, and economic capital.
- Spirituality can contribute significantly to the development of mental health, and mental health influences spiritual life.[7]

Culture and mental health

Each culture has an impact on how people perceive and comprehend mental health. Understanding and sensitivity to culturally valued characteristics will boost the relevance and success of prospective treatments. [2]

Race, Ethnicity, and Genetic influence on mental health and mental well-being

Race and ethnicity, alongside genetic factors, play complex roles in shaping mental health and well-being. Social determinants linked to race and ethnicity can contribute to disparities in access to mental health care and resources, impacting mental well-being. Genetic factors influence vulnerability to certain conditions, but interactions with the environment and experiences are vital. For instance, the "diathesis-stress" model highlights how genetic predisposition interacts with stressors.[8] These intertwined factors underscore the need for culturally sensitive care and a comprehensive understanding of mental health influences. Culture significantly shapes perceptions of well-being, influencing emotional expression, social support systems, and coping strategies, ultimately impacting an individual's mental well-being.

Mental health and social capital

The idea of "social capital" has been central to the recent renaissance in thinking about social connectivity and health promotion. According to Putnam (1995), social capital "refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit".[9] Social capital is also impacted by economic and social conditions. Research over the previous two decades has shown relationships between social capital and economic development as well as the efficiency of human service systems and neighbourhood improvement.[2] According to Woolcock (1998), having more social capital can protect individuals from social isolation, create a sense of social security, lower crime, enhance education and societal functioning, and enhance job performance.[10]

There is continuous research and discussion on the connections between social capital, physical health, and mental health as well as the viability of promoting mental health to boost social capital. The strength of social capital lies in its capacity to view the world from a fresh perspective, considering both environmental and social factors as well as associated social groups. In contrast to aggregated individual health outcomes, this perspective on networks of people interacting with their environments offers the potential to explain a wider range of collective outcomes.[2]

Mental well-being

The concept of mental well-being has developed over time in response to advances in domains such as psychology, medicine, sociology, and public health.

Initially, a focus on mental illness, with an emphasis on diagnosing and treating problems, typically overshadowed mental well-being.

However, in recent decades, there has been a paradigm shift toward a more holistic and positive perspective of mental health.

However, the term 'mental well-being' can be ambiguous at times, as it may or may not indicate the absence of mental illness or distress. Well-being has been highlighted as an indicator of national prosperity and has been associated with enhanced physical and mental health.[3]

Mental Well-being is characterized by the following:

- Optimal physical and behavioral health;
- Life's purpose;
- Active participation in enjoyable work and play;
- Pleasant relationships; and
- Contentment.

Mental health and mental well-being are different phenomena. Ill mental health or Mental disorders are characterized by abnormal psychological patterns, emotional distress, and impaired functioning. Adult Psychiatric Morbidity Survey 2007 showed Mental well-being has relatively independent associations with symptoms of mental illness.[11] It is possible for mental well-being to persist even when experiencing mental suffering.[11]

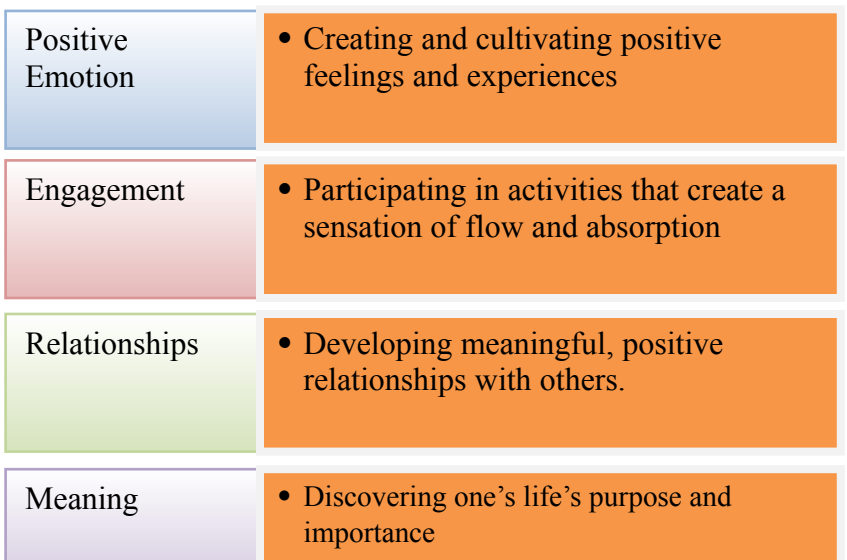
The determinants and variations of mental well-being among individuals with mental health issues are less studied and understood compared to those without such problems.[11]

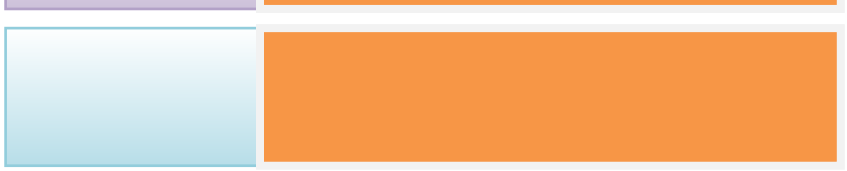
Mental well-being can fluctuate with the phases of mental illnesses, which often involve relapses and remissions. The number, frequency, and duration of relapses may influence the variation in mental well-being. [11]

Defining well-being is crucial for understanding and discussing mental health and public mental health, but it has been a subject of much debate and some controversy in recent years. Well-being falls outside the medical model of health, as it is not a diagnostic entity. It is widely recognized that subjective well-being differs significantly among individuals, as well as the factors that influence it.[12]

Mental well-being aligns closely with the WHO's comprehensive and positive definition of health and aligns with the positive psychology approach promoted by Seligman. A similar approach to defining mental well-being is used by faculties of public health, the UK. [12]

Fig.1 Five core elements of psychological well-being Seligman's PERMA model [13]





Social inclusion and well-being

Wellness is inextricably linked to social elements that can either support or obstruct social inclusion. It is obvious that a variety of obstacles such as trauma, poverty, unemployment, and other bad social situations can all have a substantial impact on the onset of behavioural health issues in individuals.

These issues not only have an impact on people's mental and emotional well-being, but they can also lead to a larger marginalization of persons, limiting their access to critical social resources such as education, economic opportunities, leisure activities, cultural involvement, and healthcare services.

Recognizing this, it becomes critical for us as a society to actively participate in the process of building vibrant, holistic, and inclusive communities. We can try to close the gaps generated by these by creating an environment that appreciates and prioritizes well-being.

Mental well-being and Quality of Life

Mental well-being refers to a positive state of emotional, psychological, and social health, characterized by a sense of contentment, resilience, and the ability to effectively cope with life's challenges. It encompasses positive emotions, a sense of purpose, and the capacity to engage in fulfilling relationships and activities.

Quality of life, on the other hand, is a broader concept that encompasses various domains of an individual's life, including physical health, psychological well-being, social relationships, environment, and personal goals. It reflects an individual's overall satisfaction with their life circumstances and their perceived ability to pursue their aspirations.

Mental well-being is a key component of overall quality of life, as positive mental health contributes significantly to an individual's perception of their life's value and fulfilment.

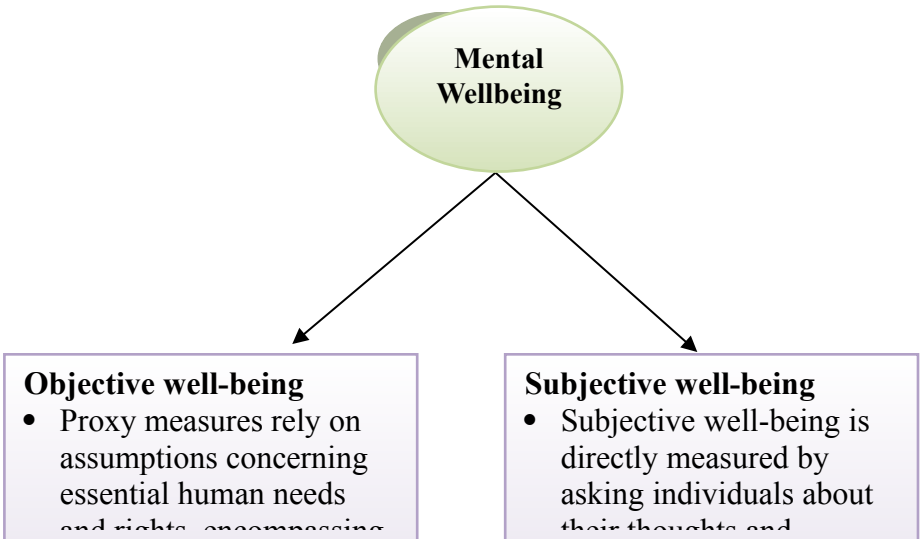
Although there are many methods for defining mental well-being, dimensional categorization as shown in Fig. 2, mental well-being is thought to have both subjective and objective components.[12]

Although the concept of QoL has been now used for more than half a century, there still needs to be more consensus on the definition of QoL. As per the WHO, QoL is defined as *"an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards and concerns"*(WHO, 2020). It is further clarified that QoL refers to a subjective assessment rooted in the person's cultural, social, and environmental context. Besides this, there are other definitions of QoL too. Wenger et al. (1984) defined QoL as *"an individual's perceptions of his or her functioning and well-being in different domains of life."* Another definition that only focuses on positive aspects of life defines QoL as *"The essential characteristics of life, which in the general public is often interpreted as the positive values of life, or the good parts of life, or the total existence of an individual, group or society"* (Lindstrom, 1992). Although it is

emphasized that QoL is more of a subjective judgment, some of the researchers have argued that QoL is determined by a host of objective parameters and, accordingly, define QoL as *"an overall general well-being that comprises objective descriptors and subjective evaluations of physical, material, social, and emotional well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values"* (Felce & Perry, 1995).

There have been some efforts to distinguish QoL from other related concepts, especially in the context of health and diseases. QoL differs from symptoms of an illness or disability arising from the illness. In the context of any illness, QoL should be understood as the perceived effect of the illness by the person on their life (WHO, 2020). QoL also should not be understood as the same or similar to lifestyle, life satisfaction, mental state, or well-being. QoL is understood as perception of the individual about their life, whereas 'well-being' is more of an indication of positive emotions and satisfaction or contentment, with the lack of long-standing and persistent negative emotions (Zikmund, 2003). QoL also should not be equated with the standard of life, which is determined by wealth or material goods (Skevington, 2007).

Fig.2 Objective and Subjective dimensions of mental wellbeing



Neurobiology of Mental Well-being

The concept of mental well-being has several dimensions and includes a variety of cognitive, emotional, and social components. It refers to a state involving complete psychological and emotional well-being that is defined by pleasant emotions, efficient functioning, and a feeling of fulfillment in life.

A complex combination of neuronal circuits, neurotransmitters, hormones, and brain areas underlies the neurobiology of mental health. Here are some significant neurobiological aspects of mental well-being listed in Tab.1

Tab.1 Various Hypothesis of the Neuro-biological Model of Well-being	
Neurotransmitters and Neurocircuitry	
1) Serotonin	This neurotransmitter is often linked to mood regulation and emotional balance. Low levels of serotonin have been associated with conditions like depression and anxiety. Selective serotonin reuptake inhibitors (SSRIs), a class of antidepressants, work by increasing serotonin levels in the brain.
2) Dopamine	Dopamine plays a role in reward, motivation, and pleasure. Healthy dopamine function is linked to feelings of satisfaction and contentment. Imbalances in dopamine can contribute to conditions like depression and addiction.
3) Endorphins	These natural pain-relieving compounds are associated with feelings of pleasure and euphoria. Physical activity, laughter, and positive social interactions can trigger endorphin release.
Stress Response and	The hypothalamic-pituitary-adrenal (HPA) axis is a crucial part of the

Cortisol	body's stress response. Chronic stress and elevated levels of cortisol, the primary stress hormone, can have detrimental effects on mental well-being. Effective stress management is important for maintaining mental health.
Prefrontal Cortex and Emotional Regulation	The prefrontal cortex, especially the dorsolateral prefrontal cortex, is involved in executive functions like decision-making, impulse control, and emotional regulation. A well-functioning prefrontal cortex contributes to effective coping strategies and emotional resilience.
Limbic System and Emotion Processing	The limbic system, including structures like the amygdala and hippocampus, plays a key role in processing emotions and forming memories. A balanced and healthy limbic system contributes to stable emotional states and adaptive responses to stressors.
Default Mode Network (DMN)	The DMN is a network of brain regions that becomes active when the mind is at rest or engaged in introspective thinking. It is associated with self-referential thoughts, mind-wandering, and aspects of mental well-being such as self-awareness and self-reflection.
Neuroplasticity and Resilience	Neuroplasticity refers to the brain's ability to adapt and rewire itself in response to experiences and learning. Positive experiences, mindfulness practices, and social connections can promote neuroplasticity and enhance resilience to stress and adversity.

Relationship between Mental health and Well-being

The relationship between mental health and well-being can be viewed through two perspectives: the dual continuum model and the single continuum model. [12]

- The dual continuum model sees mental health and well-being as separate but related, allowing for high well-being despite a mental illness diagnosis.
- The single continuum model integrates mental well-being into mental health on a spectrum, suggesting that improving overall population well-being can reduce mental illness prevalence.

  Although evidence supports a single continuum model for common mental health disorders, controversies persist in promoting mental health and measuring population well-being, particularly for severe and enduring mental illness.

Mental health is a vital aspect of human life, affecting individuals, society, and culture. It contributes to well-being, productivity, and prosperity at both individual and societal levels.

Being an inseparable part of general health, mental well-being is crucial for proper functioning in society and impacts various aspects of life. Positive mental health brings about significant social, human, and economic benefits, fostering growth and development in every society.

Measuring mental well-being

Measuring mental well-being is critical for gaining a better understanding of people's psychological health and general quality of life. It entails evaluating a variety of factors such as good emotions, life satisfaction, and a sense of purpose.

Researchers and policymakers obtain vital insights into mental health promotion and intervention initiatives by investigating these variables. Effective assessment methods aid in the identification of areas for improvement and in assisting individuals in their pursuit of optimal well-being. Tab.2 shows the scales use in measuring mental well-being.

Measurement of Well-being & Quality of life: Different instruments have been developed to assess well-being over the years. As well-being is subjective, most of the instruments used to evaluate well-being are self-reported. The length of these instruments varies from a single-item global life satisfaction question to multiple items scales assessing different components of well-being. Some of the available scales are listed in Table-2. Among all these scales WHO-5 Well-Being Index is possibly the only scale available in about 30 languages, although not in any of the Indian Languages.

Table-2: Scales for Assessment of Well-being

Name of the scale	Number of items	Domains
WHO-5 Well-Being Index	Five items questionnaire It is suitable for children aged nine and above	No specific domains
Psychological well-being scale (Ryff et al., 1989; 2010)	42 items version 18 items version	Measures well-being and happiness in 6 domains, i.e., autonomy, environmental mastery, personal growth, positive relation with others, purpose in life, and self-acceptance
Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)	14 items scale	Self-report scale Consists of 14 positively worded items assessing positive affect, relationships, and functioning over the last 2 weeks on a 5-point Likert scale
BBC subjective well-being scale (Priesack & Alcock, 2015)	24-item self-report questionnaire	Five domains of well-being in this scale include Goal Pursuit, Life Satisfaction, Positive Affect, Quality of Life, and Sense of Meaning.
Well-being Numerical Rating Scales (WB-NRSs) (Bonacchi et al., 2021)		Five-item instrument to assess physical, psychological, spiritual, relational, and general well-being
Comprehensive well-being scale (Sham et al., 2021)	20 items	Factor analysis yielded a 2-factor structure, i.e., Intrapersonal Well-Being, and Transpersonal Well-Being

Satisfaction with Life Scale (SWLS)	5 items	Self-report measure that evaluates the overall life satisfaction Each statement is rated on a 7-point Likert scale
General Well-being Schedule, (Dupuy1977)	23 items	Focuses on subjective feelings of psychological well-being
Life Satisfaction Index A (Neugarten et al., 1961)	20 items	Focuses on psychological well-being
Quality of Life Scale (Hyde et al., 2003)	19 items	Assess psychological well-being related to the quality of life; it measures four domains (i.e., control, autonomy, pleasure, and self-realization)
Mental Health continuum is Long and Short-Form (Lamers et al., 2011)	40 items 14 items	Measures psychological well-being, social well-being, and emotional well being
Flourishing Scale (Diener et al., 2010)	Eight items	Mainly measures psychological well-being in the flourishing domain
PREMA Profiler (Butler & Kern, 2016)	23 items	It mainly measures psychological well-being in the flourishing domain, and the subscales include positive and negative emotions, engagement, relationships, meaning, accomplishment, and health.
Flourishing Index (VanderWeele, 2017)		Assesses Psychological Well-Being
Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988)	20-items	Assesses positive and negative affect
Bradburn Scale of Psychological Well-Being (Affect Balance Scale) (Bradburn & Noll, 1969)	Ten items	Assesses positive and negative affect
Satisfaction with Life Scale (Diener et al., 1985)	Five items	Assess general life satisfaction
Life Satisfaction Scale (Koivumaa-Honkanen, 1998)	Four items	Assess general life satisfaction
Pearlin Mastery Scale (Pearlin & Schooler, 1978)	Seven items	Assesses positive psychological well-being
Internal-External Locus of Control Scale (Rotter, 1966)	29 items	Assesses mastery domain of positive psychological well-being

Subjective Happiness Scale (Lybomirsky & Lepeer, 1999)	Four items	Assesses happiness domain of positive psychological well-being

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)- has been translated and validated in India (Grover et al, 2020-Indian Journal of Psychological Medicine) (Grover S, Dua D. Hindi Translation and Validation of Scales for Subjective Well-being, Locus of Control and Spiritual Well-being. Indian J Psychol Med. 2021 Nov;43(6):508-515.)

The various available QoL instruments can be broadly divided into generic QoL instruments and those that are disease-specific. Some of the standard generic QoL instruments include WHOQOL-100, WHOQOL-BREF, Medical Outcomes Study Short-Form 36 (MOS SF-36), EuroQol EQ-5D, Short-Form Health Survey (SF-12), Visual Analogue Scale EQ-VAS, etc. Studies involving patients with various physical illnesses suggest impairment in QoL. Some of the QoL scales developed by WHO specifically focus on Spirituality, Religiousness and Personal Beliefs (SRPB) and accordingly the scale is known as WHOQOL SRPB). Among the various scales of QoL, WHOQOL-BREF (Saxena S, Chandiramani K, Bhargava R. WHOQOL-Hindi: a questionnaire for assessing quality of life in health care settings in India. World Health Organization Quality of Life. Natl Med J India. 1998 Jul-Aug;11(4):160-5.) and WHOQOL-SRPB (Grover S, Shah R, Kulhara P. Validation of Hindi Translation of SRPB Facets of WHOQOL-SRPB Scale. Indian J Psychol Med. 2013 Oct;35(4):358-63) has been validated in Hindi in India.

A comprehensive understanding of mental health and well-being necessitates a detailed exploration of the various determinants that influence both individual well-being and societal outcomes, as highlighted in the preceding discussion.

DETERMINANTS OF MENTAL HEALTH AND WELLBEING

The relationship between well-being and mental health problems is interrelated. When well-being is high, the likelihood of experiencing mental illness decreases, whereas poor mental health diminishes overall well-being. Studies indicate that individuals with mental health problems constitute the largest proportion with low levels of well-being. Consequently, prioritizing the promotion of well-being is crucial both for preventing mental illness and facilitating recovery from mental health issues.

Higher levels of well-being have numerous favourable effects, including enhanced educational achievements, adoption of healthier lifestyles, and a decrease in risky behaviours like smoking, excessive alcohol consumption, and substance abuse. Additionally, high well-being is associated with increased productivity, and reduced levels of crime, violence, and antisocial behaviour.[14]

Factors that contribute to good mental health and well-being may vary from those that contribute to poor mental health. Several risk factors increase the chances of experiencing mental health issues or poor well-being throughout one's life. Conversely, protective factors have been identified to promote positive mental health. It is important to note that the determinants of mental well-being may differ from the determinants of mental ill health. [14,15,16.17]

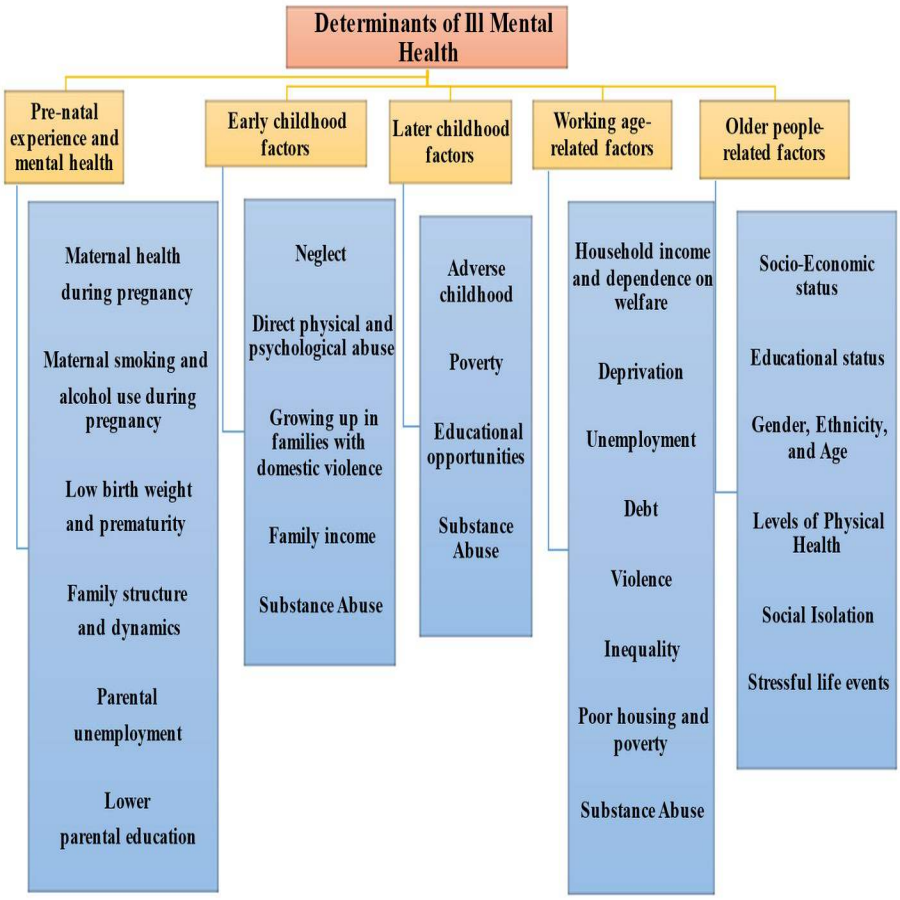
The determinants of mental ill health vary throughout a person's life, but the evidence shows that most mental health issues develop before adulthood.

Research suggests that even a small improvement in well-being can help reduce the risk of mental health problems and support individuals in flourishing. Different determinants of mental health and well-being are presented in Fig.3[18,19]

Fig.3 Determinants of Mental Health and Well-being

Mental illness-related determinants arise from complex interplays and vary across the lifespan. These factors intertwine, impacting mental health risk and resilience. Figure 4 illustrates the determinants of poor mental health.

Fig.4 Determinants of Mental Health and Well-being- illness-related factors



An individual's entire mental well-being is influenced by a variety of variables, which also influence mental health. These factors cover the biological, psychological, social, and environmental domains, and they are complex and linked.Tab.3 shows various determinants of mental health and well-being

Tab.3: Determinants of mental health and well-being[15-21]		
Determinants	**Examples**	**Description**
Individual Factors	**Intelligence**	Higher cognitive abilities can contribute to better problem-solving skills and coping mechanisms
	Easy temperament	Individuals with appositive disposition and adaptability tend to have higher mental Wellbeing
	Resilience	The ability to bounce back from adversity and cope with stressors positively.
	Interpersonal relationships	Healthy and meaningful connections with others, including family, friends, and peers.
	Self-esteem	A positive self-perception and confidence in one' abilities.
Social Factors	**Social capital**	Resources are available through social networks, community participation, and support systems.
	Social support:	Having a strong network of supportive relationships and social connections
	Community participation	Engaging in activities and contributing to the community, fostering a sense of belonging
Economic Factors	**Income.**	Higher-income levels are associated with better mental health outcomes, as financial stability can reduce stress.
	Employment	Meaningful and secure employment provides a Sense of purpose and financial security
	Poverty	Living in poverty increases the risk of mental health problems due to limited access to resources and opportunities

Education	**Level of education**	Higher levels of education are often linked to better mental health outcomes.
	Access to quality education	Adequate educational opportunities and resources contribute to positive mental development.
Physical Health	**Physical well-being**	Good physical health, including regular exercise, healthy diet, and sufficient sleep, Supports mental well-being.
	Access to healthcare	Adequate access to healthcare services and preventive care contributes to better mental health outcomes.
Housing	**Housing quality**	Safe, secure, and suitable housing conditions positively impact mental well-being.
	Stability	Having stable housing and a sense of belonging in one's living environment.
Family and Relationships	**Positive family dynamics**	Supportive, loving, and nurturing family relationships foster mental health.
	Support networks	Strong social support systems beyond the the family units, such as friends and community groups
	Supportive adults	Having caring and supportive adults in one's life, such as parents or mentors, can provide Emotional stability and guidance
Life Events	**Positive life events**	Joyful experiences and significant achievements contribute to positive mental well-being.
	Coping mechanisms	The ability to effectively cope with stressful life events and adapt to changes.
Culture and Identity	**Cultural norms**	Cultural values, beliefs, and practices that support mental health and well-being.
	Sense of belonging	Feeling connected to one's culture, community, and identity promotes mental well-being.

Access to Resources	**Access to mental health services**	Availability and affordability of mental health support and treatment options.
	Social support systems	Access to networks and resources that provide assistance during challenging times.
Environment	**Urban design**	Well-designed cities and neighborhoods that promote physical activity, community engagement, and access to nature.
	Green spaces	Access to parks and natural environments that contribute to stress reduction and improved mental health.
	Community infrastructure	Availability of community centers, recreational facilities, and amenities that foster social connections.
Lifestyle Factors	**Diet**	A balanced and nutritious diet contributes to overall mental and physical well-being.
	Exercise	Regular physical activity is associated with Improved mental health and mood.
	Substance use	Associated with poor mental health and well-being.
	Sleep patterns	Sufficient and quality sleep is crucial for mental and emotional balance.
Stigma and discrimination	**Reduction of stigma**	Challenging and reducing societal stigmatization around mental health issues.
	Promotion of inclusivity	Creating an inclusive and accepting society That embraces diversity

Protective Factors

The concept of protective factors relates to conditions that enhance people's ability to withstand and overcome risk factors and disorders. Protective factors are defined as factors that modify, eliminate, or alter an individual's response to environmental hazards that predispose them to negative outcomes. These protective factors are closely associated with positive mental health.[16]

At the individual level, various factors have been identified as protective throughout different stages of life. These include factors such as higher intelligence, a temperament that is easy to manage, and the presence of supportive adults. In late adolescence, resilience is linked to positive interpersonal relationships and a strong sense of self.

Social protective factors play a significant role as well. Numerous studies examining the structural aspects of social capital have found a statistically significant correlation between low social capital measures and poor mental health outcomes. [16]

Social capital refers to the resources available to individuals and society through social relationships, including features such as civic participation, norms of reciprocity, and trust in others, which facilitate cooperation for mutual benefit.

The combined impact of various risk factors, along with the absence of protective factors, and the complex interplay between them, contribute to an increased vulnerability that can lead to mental ill-health and eventually diagnosed mental disorders. The field of preventive science has substantially developed over a period, drawing contributions from social, biological, and neurological sciences. These interdisciplinary efforts have provided insights into the role of both risk and protective factors in the developmental pathways to mental health. Strategies must be aimed at promoting positive mental health by strengthening the factors that provide protection throughout all stages of life. A collective approach that targets the entire population and encompasses a wide range of activities to foster positive mental health must be emphasized.

COPING STRATEGIES

In order to lower risks, foster resilience, and create environments that are supportive of mental health, promotion, and prevention interventions first identify the individual, societal, and structural determinants of mental health. Interventions may be created for single people, particular groups, or entire communities.

Promotion and prevention initiatives should encompass the education, labour, justice, transportation, environment, housing, and welfare sectors as changing the determinants of mental health frequently requires action beyond the health sector. Here we discuss the psychological aspects of care and coping in relation to mental health and well-being.[2]

COPING

Coping has various definitions and it considers a psychological tool to deal with various external and internal stressful situations. coping is defined as

- The thoughts and behaviours mobilized to manage internal and external stressful situations.[20]
- Unconscious or conscious way of dealing with stress [22]
- Activities of which the person is aware to reduce stressful events or situations- for example deliberately avoiding further stressors [23]

Coping strategies are voluntary mobilization of acts whereas defense mechanisms are subconscious or unconscious responses to reduce stress. [23] Coping strategies help to deal with stressful situations and may lead to emotional and somatic responses. Coping skills do not necessarily remove stress or eradicate challenges like mental illness, but they go a long way toward helping people function well despite challenges. People can use their own personal coping skills to take charge of their thoughts, feelings, and actions, and when they do, they find that they experience mental health and even begin to thrive.

Coping can be broadly classified as [23]

Reactive coping (a reaction following the stressor):

Excel in stable environments because they are more routinized, rigid, and less reactive to stressors

Proactive coping (aiming to neutralize future stressors):

Perform better in a more variable environment.

COPING STYLE AND COPING RESPONSE

Coping style is a relatively stable trait of behaviour and it differs from coping response which is more specific to a particular event. Different people react to stress with different coping styles and sometimes person can modify his or her coping style as a response to stress.[24]

Coping style [25]

While dealing with difficult circumstances, some individuals could be motivated to solve the issue right away, while others would wish to avoid it altogether. Although there is not a single best way to deal with stress, it's crucial to be aware of different ways to cope.

- **Active Coping**
  It is dealing with the stressor directly. An active coping strategy is an effort to deal with the stressor and try to lessen its impact on you, whether you choose to focus on the issue at hand (problem-focused) or how your emotions are about the situation (emotion-focused).
- **Avoidant Coping**
  It entails us avoiding the scenario that is causing a stress response or completely dismissing our feelings about the stressor.

APPROACHES USED TO COPE

The mechanisms we use to cope may be called approaches or techniques of how we implement our coping skills. Typically, we utilize cognitive and behavioural approaches to cope.[26]

- Cognitive coping strategies are those that involve thinking.
- Behavioral coping strategies are action-based.

Emotion-focused and problem-focused coping styles are the two primary coping mechanisms identified by most of the coping literature. Algorani and Gupta (2021)[23], in contrast, add meaning-focused and social coping, often known as support-seeking methods of coping, to the initial two styles to create four key coping categories. A fifth coping method termed avoidance-focused is mentioned by Meyerson et al. (2022). [27]

Different coping styles explain in Tab.4

Tab.4 Different Coping Styles and their Description [23,25]		
Emotion-Focused Coping Style	• It involves reducing emotional disturbance associated with stress while ignoring to address the problem. • It focuses on ourselves and our emotion	• Aim to reduce emotional distress • Similar to the cognitive approach • It considers problematic because it may reason for mental health issues. • It can be useful in the long term if the problem is uncontrollable.
Problem-Focused Coping Style	• Address problems causing distress	• Act by identifying and interpreting the problems and planning to solve the problems. • Consider the most effective way to deal with stress. • Similar to the behavioural approach
Meaning-Focused Coping Style	• It uses cognitive strategies to process and make sense of the meaning of a situation.	• Useful when one cannot control the situation. • Religious and Spiritual beliefs, values play an important part in this coping style.
Social Coping (Support-seeking)	• When person neutralised stress by taking emotional or instrumental support from his/her community or society.	• children and adolescents to seek support from parents or peers via this coping style
Avoidance-Focused Coping Style	• Trying to avoid stressful situations or events by distraction.	• Responsible for the negative functioning of individual

Coping Mechanism Types

Coping mechanisms can be categorized into Maladaptive and Adaptive strategies.Maladaptive coping is based on avoidance of external/ Internal stimuli. In contrast, adaptive coping strategies match the stressor and aim to reduce emotional distress.

It is important to note that emotional, problematic, significant, social, and avoidant styles can be maladaptive and ineffective or adaptive and effective, depending on the outcome.Tab.5 shows coping mechanism types and their examples

Tab.5 Types of Coping Mechanisms [24,28]

Healthy Coping/Adaptive Strategies	**Unhealthy Coping/Maladaptive Strategies**
Healthy coping is utilizing a coping strategy that allows us to respond to a stressful situation in a healthy capacity. When struggling with a stressor or a challenge, healthy coping mechanisms may not instantly feel gratifying, but they can promote positive long-term change (Stallman et al., 2021). Some healthy coping examples include: • Talking about your problems with loved ones • Eating well and exercising regularly • Reaching out to a mental health professional for extra support • Self-soothing techniques such as meditation or journaling • Using problem-solving skills to address the situation	It employs strategies that respond to stressors in an unhealthy or harmful way. While unhealthy coping mechanisms might offer comfort instantaneously, they tend to lead to negative consequences down the road (Stallman et al., 2021). Some unhealthy coping examples include: • Procrastinating on the problem or avoiding it altogether • Overeating or undereating, and sleeping too much or too little • Partaking in excessive alcohol or drug usage • Withdrawing from social situations • Self-harm

Numerous coping techniques are effective in some circumstances. A problem-focused strategy may be the most advantageous, according to some studies, while other studies consistently show that some coping techniques have negative effects.[24] Maladaptive coping is the term used to describe coping strategies that are linked to poor mental health outcomes and greater levels of psychopathology symptoms. Disengagement, avoidance, and emotional restraint are a few of these.[29]

The medial prefrontal cortex and nucleus accumbens, serotonergic and dopaminergic inputs play a role in the physiology of various coping mechanisms.[30]

The neuropeptides oxytocin and vasopressin also play a significant role in coping mechanisms. On the other hand, neuroendocrinology that involved plasma catecholamine levels, corticosteroids, and the activity of the hypothalamic-pituitary-adrenocortical axis was unlikely to have a direct causal association with a person's coping style.[31]

What different coping styles are used in healthy and unhealthy ways describe in Tab.6

Tab.6 Different Coping Styles in Relation to Healthy and Unhealthy Coping Mechanisms [32]		
	Healthy Coping/Adaptive Strategies	**Unhealthy Coping/Maladaptive**
Emotion-Focused Coping Style	• Ventilation of emotion • Evaluation of problem • Positive reappraisal of the problem • Meditation and breathing exercises • Humor • Positive thinking • Writing Journal	• Business • Failing to talk about emotions • Toxic Positivity: an unhealthy way of looking at something good in a bad situation
Problem-Focused Coping Style	• obtaining information/ advice • planning • Solving problem • Confrontation	• Overanalysing and incisiveness
Meaning-Focused Coping Style	• finding good in a bad situation	• overthinking
Social Coping (Support-seeking)	• taking help from friends • Speaking with a counselor	• Isolation • Venting
Avoidance-Focused Coping Style	• controlled distraction	• substance misuse or smoking • Denial and disengagement • Overspending money without thinking • Overeating • Harming oneself

Measuring Coping Response

Identifying and measuring coping responses is crucial for understanding how individuals cope with stressors. Resilience and emotional well-being depend heavily on coping mechanisms. In order to promote positive mental health outcomes, we can obtain valuable insight into coping strategies people employ through validated scales and inventories. Table.7 shows different coping scales and their brief description and Fig.5 describe different coping scales available for different age groups

Tab.7 Coping scales [33]	
Scales	**Brief Descriptions**
COPE (Coping Orientation to Problems Experienced)	• To evaluate the different coping strategies individuals, employ when faced with stress, Carver et al. (1989) developed the

	COPE inventory • In the COPE inventory, there are two components: problem-focused coping and emotion-focused coping • 1-4 points scored in each statement
Brief- COPE	• 28 items • Shorter version of COPE
Coping Self-efficacy Scale	• Assess a person's confidence in their ability to cope • 26 statements, score of 0,5,10 for each statement
Coping Strategies Questionnaire-Revised	• 27-item questionnaire • measures the use of strategies for coping with pain by assessing six domains: Distraction; Catastrophizing; Ignoring pain sensations; Distancing from pain; Coping self-statements; and Praying.
Brief Resilient Coping Scale (BRCS)	• Sinclair and Walston (2004) developed the Brief Resilient Coping Scale (BRCS) to measure an individual's ability to cope with stress in a highly adaptive way. • score from 1 (Does not describe me at all) to 5 (Describes me very well).
Proactive Coping Inventory (PCI)	• Measure different proactive approaches to coping and contains seven subscales. • 55 statements score in the range of 1-4.
Coping Response Inventory	• Brief self-report inventory • Identifies the cognitive and behavioural responses an individual used to cope with a recent problem or stressful situation.
Ways of Coping Questionnaire	• It measures coping processes — not coping dispositions or styles.
Dyadic Coping Inventory (DCI)	• Designed by Bodenmann • 37 items scale, assessing strategies to cope with stressful situations in intimate relationships
Coping Checklist	• Developed by Dr Kiran Rao • Available in various Indian languages • Open-ended , 76 items,

Various coping scales, coping Behavior Assessment Scale has been adapted and validated in the Indian context

Coping Behavior Assessment Scale (Indian Adaptation): Establishing Psychometrics Properties (Janghel G, Dr. Shrivastav P.) The International Journal of Indian Psychology).

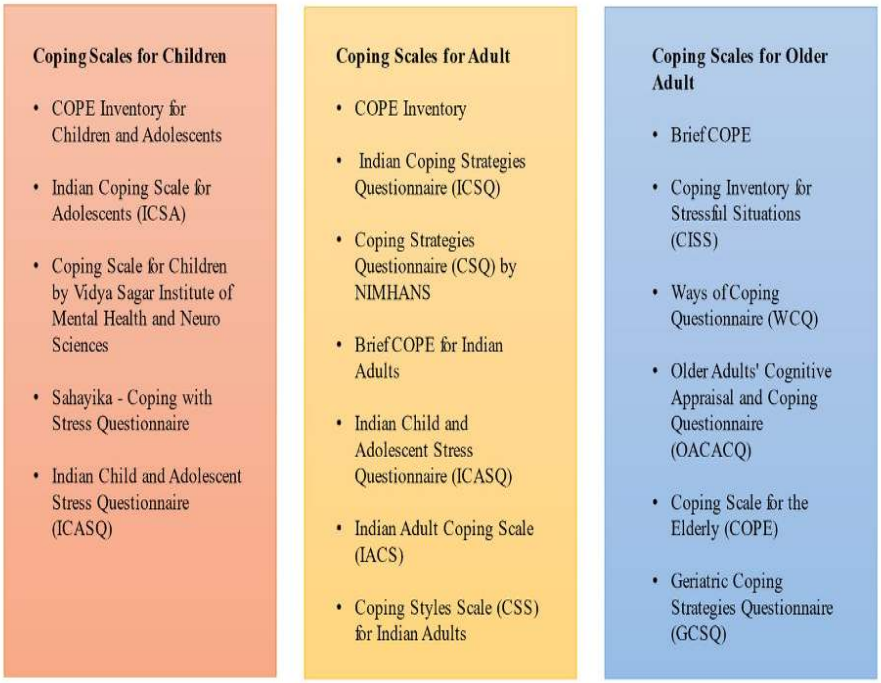
The coping scale specifically focusing on religious coping, i.e., brief religious coping (Grover S, Dua D.)

Translation and Adaptation into Hindi of **Central Religiosity Scale, Brief Religious Coping**

Scale (Brief RCOPE),
Duke University Religion Index (DUREL). Indian J Psychol Med. 2019 Nov 11;41(6):556-561).
Ways of **coping checklist** has also been translated to Hindi and some of its psychometric properties have been assessed (Shah R, Grover S, Kulhara P. Coping in residual schizophrenia: Re-analysis of ways of Coping checklist. Indian J Med Res. 2017 Jun;145(6):786-795).
The stress copping strategies scale is also available in Hindi (National Psychological Corporation https://www.npcindia.com/Psychological-Test/STRESS-COPING-STRATEGIES-SCALE/1000022/1)

All the scales mentioned above have been validated by respective authors and can be obtained from them by personal communication.

Fig. 5 Different coping scales available for the Indian population of different age groups



A variety of techniques are used by people as coping mechanisms to deal with stress, difficulties, and emotional pain. These pursuits are numerous and individual since people frequently find comfort and satisfaction in a variety of ways. Coping strategies give people the tools they need to deal with life's ups and downs, from exercising and engaging in creative hobbies to getting social support and meditating. People can develop resilience and advance their mental health by adopting these various coping methods into their daily life.

Coping can include various activities but the below Table.8 shows a few examples of coping activities

Table.8 Coping Activities Examples[34]	
Social Coping Activities	Stay connected with others to build a support network.
	Share your feelings and thoughts with someone you trust.
	Participate in activities that bring you joy and fulfilment./ Destressing with soothing activities like coloring, reading, etc.
Lifestyle related Coping Activities	Avoid harmful substances that may negatively impact your mental health.
	Eating healthy
	Sleeping adequately
Personal and Emotional Activities for Coping	Noticing tension and taking deep breaths to reduce it
	Catching negative thoughts and replacing them with healthy ones
	Setting and maintaining appropriate and healthy boundaries between you and others
	Finding things that make you grateful
	Creating little moments of joy each day
	Take two minutes to engage in mindfulness and appreciate the world around you.

Coping in the Indian Context

Spirituality is a widely accepted idea as coping in the Indian population. During the COVID pandemic, people often use religious coping to deal with their routine day-to-day stress.[35] It entails faith and obedience to an all-powerful entity known as God, who rules over the universe and man's fate. It entails how people fulfilled what they believe to be the purpose of their existence, as well as a search for the meaning of life and a sense of connectedness to the cosmos. The universality of spirituality transcends religion and culture. At the same time, spirituality is highly personal and unique to everyone. It is a holy domain of human experience. Love, honesty, patience, tolerance, compassion, a sense of detachment, faith, and hope are all attributes that spirituality fosters in man. Recently, there have been some reports indicating that several places. There have recently been some reports indicating that certain parts of the brain, primarily the nondominant one, are engaged in the appreciation and fulfilments of spiritual values and experiences.

RELIGION AND SPIRITUALITY[36,37]

Religion is spirituality institutionalized. As a result, there exist numerous religions, each with its own set of beliefs, practices, and teachings. They have several community-based worship

programs. All of these religions have one thing in common: spirituality. Religions may lose their spirituality when they become oppressive institutions rather than agents of benevolence, peace, and harmony. They have the potential to divide rather than unite. History will tell us that this has happened on occasion. It is stated that more blood has been shed in the name of religion than in any other. Examples include medieval European holy wars, as well as modern-day religious-based terrorism and conflicts.

We must remember that religious organizations are designed to assist us in practicing spirituality in our daily lives. They require periodic revivals to establish spirituality.

Common Spiritual practices for psychological health and well-being[36]

- Practicing meditation, mindfulness, prayer, and profound introspection.
- Spending time reading for reflection (literature, poetry, or scripture).
- Singing or playing sacred music.
- Being a part of a religious tradition.
- Participating in religious ceremonies, rituals, symbolic activities, or worship.
- Participating in pilgrimages or retreats.
- Following a fasting regimen or other lifestyle habits.
- Spending time outside admiring nature.
- Enjoy being creative, such as through painting, sculpture, cooking, gardening, and so on.
- Be of assistance to others.

Steps for Improving spiritual well-being[36]

As you take steps to promote a good mental state, make sure you also take care of your spiritual health. Different tactics work for different people in different ways. You should do whatever makes you the most at ease and pleased. Some suggestions for improving your spiritual health include:

- Determine what makes you feel at peace, cherished, strong, and connected.
- Devote a portion of your day to community service.
- Read motivational books.
- Consider meditating.
- Go for a walk outside.
- Pray, either alone or in a group.

- Inclusion of yoga in daily living.
- Participate in your preferred sport.
- Schedule some alone (leisure) time for yourself.

Spirituality: Key points

- Spirituality has been characterized as an expression of transcending means of realizing human potential.
- Spirituality is a known psychological phenomenon that differs from religiosity and is applicable across cultures.
- Significant study evidence suggests that spirituality is crucial in the treatment of psychological problems.

Spirituality: positive impact.

Spirituality can help your mental health in a variety of ways:

- You might have a stronger feeling of purpose, tranquillity, hope, and meaning.
- You may feel more confident, self-esteem, and self-control.
- It can assist you in making sense of your life events.
- When you are sick, it can help you feel stronger and recover faster.
- Those who belong to a spiritual community may receive additional help.
- You may work on improving your relationships with yourself and others.

Many persons suffering from mental illnesses find hope by speaking with a religious or spiritual leader. Some mental diseases might be characterized as moments when people doubt their worth or purpose in a way that makes them feel depressed. Incorporating spirituality into the therapy of mental health issues can be incredibly beneficial.

Spirituality: negative impact

Some persons may exploit emotionally sensitive people by claiming to encourage their spirituality. When emotionally susceptible, one is more likely to be persuaded to engage in risky behaviour.

Measuring spirituality as a coping mechanism for mental well-being can be a complex task, as both spirituality and mental well-being are multifaceted concepts that can vary greatly from person to person.

Several standardized scales and questionnaires have been developed to measure spirituality and its relationship to mental well-being. Examples include the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS), the Spiritual Well-Being Scale (SWBS), and the Functional Assessment of Chronic Illness Therapy - Spiritual Well-being Scale (FACIT-Sp).

These scales typically consist of items that assess beliefs, practices, and experiences related to spirituality, as well as their impact on mental health. Tab.9 shows a few examples of scales available for measuring spirituality in reference to mental well-being.

Tab.9 Few examples of Spirituality scales in the Indian Population	
WHO Quality of Life - Spirituality, Religiousness, and Personal Beliefs (WHOQOL-SRPB)	This module from the World Health Organization's Quality of Life assessment includes questions related to spirituality and religiousness, and it can be used in conjunction with other well-being scales.
Indian Mental Health Scale (IMHS)	While not exclusively focused on spirituality, the IMHS assesses mental health and well-being in the Indian context, which often includes spiritual dimensions due to cultural interconnections.
Spiritual Well-being Scale (SWBS) - Indian Adaptation	The SWBS measures aspects of spiritual well-being, and an adaptation for the Indian context might include items that align with cultural and spiritual norms.
Saraswathi/Spiritual Quotient Scale (SQS)	This scale focuses on assessing spiritual intelligence and well-being, considering Indian cultural and philosophical foundations.

Among these scales, WHOQOL-SRPB (Grover S, Shah R, Kulhara P. Validation of Hindi Translation of SRPB Facets of WHOQOL-SRPB Scale. Indian J Psychol Med. 2013 Oct;35(4):358-63) has been validated in Hindi in India. Certain scales like Central Religiousity scale and Duke University Religion Index (DUREL) has been adapted and validated in Hindi (Grover S, Dua D. Translation and Adaptation into Hindi of Central Religiosity Scale, Brief Religious Coping Scale (Brief RCOPE), and Duke University Religion Index (DUREL). Indian J Psychol Med. 2019 Nov 11;41(6):556-561). (Dua D, Scheiblich H, Padhy SK, Grover S. Hindi Adaptation of Centrality of Religiosity Scale. *Religions*. 2020; 11(12):683. https://doi.org/10.3390/rel11120683)

SUMMARY

We explore various facets of mental health and well-being in this article. The study thoroughly examines the ideas of mental health and mental well-being, emphasizing the role that good mental health plays in promoting general wellness. The article dives into the complex concept of mental health, highlighting its benefits and how it enhances a person's quality of life. The topic of measuring mental well-being is covered, putting light on the various tools and techniques used to rate and quantify this crucial aspect of humanity. The identification of variables that affect mental health and well-being is one of the main focuses of this chapter. The work emphasizes how biological, psychological, social, and

environmental elements interact in complex ways to collectively determine a person's mental state.

This comprehensive analysis provides valuable insights into the holistic approach required to promote and maintain optimal mental health.Each individual employs a different coping strategy to deal with challenges and stressors. In our article, we explore and discuss various coping styles.

In conclusion, the article offers a comprehensive understanding of mental health and well-being, illustrating its conceptual foundations, determinants, and coping mechanisms.

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Mental Health and Well Being in Children and Adolescents

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The aim of this document is to bring to the forefront the need for psychiatrists to approach well being from a neuro-science perspective. In case of children and adolescents, being in the neuro-developmental group, this is actually a significant paradigm to determine, as it can affect their developmental trajectory. Hence, instead of studying only illness, it is equally important to study wellness, and it's scientific corelates. While the authors of this particular document have no independent research in the said field, the attempt is to collate the information available, and make it a ready reckoner for the treating psychiatrist.

Hence we have discussed neuro-development and epigenetics, parenting, communication, early schooling, role of environment including COVID-19, career choices and policies involving children and adolescents, which may impact well-being and care overall.

To add WHO/UNICEF data – well being in CAP

I] Neurodevelopment and Well Being:

Typically, brain development involves a series of changes that facilitate motor, cognitive, social and academic functioning. Additionally, the typical development and the trajectory for development allows one to understand atypical development.

Typical neurodevelopment: This involves the malleable process of brain development. It is influenced by intrinsic factors such as genetic makeup, maternal health, and external factors such as exposure or experience across life span. [1]

Prenatal to early childhood **–** Neuronal changes including cell proliferation, cell loss, synaptogenesis, pruning and synaptic plasticity as well as myelination promotes brain development. The neuronal changes increase in the first few years of life. The fastest brain growth occurs between 25 to 40 weeks of gestation.[2]. By 2 years the frontal lobe, have 50 percent more synapses. Also, elimination of synapses occurs throughout childhood which enables efficiency in functioning and refinement in ability. From the 3rd trimester till the age of 2 years, a growth spurt occurs. Myelination beginning during gestational period, begins from deep inside the brain to the outside and from posterior to anterior. Early on, primary sensory and motor cortices myelinate during the gestational phase. The secondary areas of basic senses (auditory discrimination, motor planning, visual discrimination, sensory discrimination) myelinate until 4 months after birth. The higher cortical areas such as frontal and parietal lobes, myelination continues until twenties. Amygdala responsible for emotional processing and hippocampus responsible for memory increase in volume until the age of 30 years. Male brains develop more slowly than female brains which adds to the risk of developing neurodevelopmental disorders.

Childhood **–** Development of connections, brain growth and myelination continue in childhood. Frontal lobe responsible to cognition and temporal lobe growth responsible for self – regulation. Development of language and spatial skills development occur during this phase.

Adolescence till young adult – This phase allows higher order processing. There occurs reduction in grey matter and increase in white matter. Selective pruning which is thinning of cortex occurs. This process results in cognitive development – cognitive control and decision making. Changes in the amygdala, and hippocampal growth results in learning and ability to respond to stress.[1] Myelination at the association cortex enable achievement of academic skills. With the onset of puberty, concept formation and task switching progressively develop.

The point to note here is that neural development is influenced by various factors which results in deviance from the usual course of development. Etiological factors such as genetic factors, perinatal factors, psychosocial factors and environmental factors play a role in neurodevelopment.

Alterations or deviance from the typical course of development may lead to various neurodevelopmental conditions. .

Checklist for typical neuro-development	
√ Social Smile	2 months
√ Follows moving objects with eyes	2-3 months
√ Disappearance of Moro's and grasp(primitive reflexes)	5 months
√ Squeals/ laughs	5 months
√ Sits with support	6 months
√ Peek- a-boo	8 months
√ Walks	12 months
√ Proto-imperative pointing	12 months
√ Vocabulary- 15 words	18 months
√ Pretend play/ imitation/ drawing basic shapes/colours	3-4 years
√ Understands rules and regulations, social and moral norms	7-8 years
√ Peer group influences start dominating	9 years to adolescence

Table 1. Checklist for typical neurodevelopment [3]

Conditions with atypical neurodevelopment:

Attention deficit hyperactivity disorder:

- Delay in cortical maturation and volume (ventromedial and prefrontal region) and eventually majority reach typical benchmarks at later points in time.
- Lag in neurocognitive measures of inhibition. Maturational delay of prefrontal cortex which help in inhibition, working memory and temporal processing.
- Increased volume of striatum, anterior cingulate and medial temporal lobe with an increase in age.
- ADHD persist in some in adulthood. It is associate with low cortical volume. Possibly may result from gene environment interaction.

Autism Spectrum Disorder:

- Presents as variability in symptoms in presentation and severity and results from delayed maturation across different areas in the brain.
- Decreased connectivity is attributed with increase in cell proliferation till age of 2 years with excess growth of amygdala (associated with joint attention deficits) followed by reduced cortical volume.
- Differences in interhemispheric connectivity in auditory cortex in the auditory cortex were noted.
- Weaker connectivity regions included anterior cingulate cortex responsible for scial processing.

Chronic illness and traumatic brain injury:

- The shift in developmental trajectory after the stressor resulting in alteration in typical course of development. Focal or global involvement of the brain areas.

Schizophrenia Spectrum disorders:

- Shift in trajectory with onset of disorder, subtle differences in typical development. Later in the course, altered cortical volume, grey matter loss and altered reorganisation of neural network in adolescence.
- Connectivity is affected especially in adolescence coinciding with vulnerability for schizophrenia onset.

Table 2. Conditions with atypical neurodevelopment [1]

II] Impact of Epigenetic factors on child development and well being:

The formation and development of brain is facilitated by genetic expression and interplay of the environment with the genes. The environment includes family, social, educational and experiences of the child. The concept of gene environment interaction explains for example – how a certain gene variant may be responsible to predict a phenotypic outcome in the presence of a stressful environment versus another gene variant which protects from the phenotypic outcome in stressful environment. Various environmental factors which influence brain development in complex ways either by direct or indirect exposure to placenta, altered maternal physiology which extends to post-natal period.[4]

***Prenatal period* :**

i. **Drug exposures:**

Exposure to drugs and toxins during the prenatal period results in epigenetic changes in the placenta, fetus and infant. Smoking in mothers during pregnancy may result in DNA methylation changes in the placenta, fetal cord cells and buccal cell samples in children at 3- 6 years of age resulting in hyperactivity and conduct disorder.[4]

ii. **Diet and nutrition:**

Food deprivation during pregnancy led to DNA methylation changes in imprinted genes eventually leading to metabolic and neurodevelopmental abnormalities. Reduction in folate alters DNA methylation within the imprinted genes within placenta and fetal cord cells. With folate supplementation during pregnancy, an alteration in DNA methylation resulting marked reduction in neurodevelopmental abnormality.

Obesity and high fat diet results in DNA methylation alterations, resulting in acceleration of aging.

iii. **Maternal stress:**

Exposure stress and trauma and anxiety in mother may result in DNA methylation changes of HSD11B2 gene in the placenta responsible for exposure to intrauterine stress.

iv. **Trauma:**

Trauma during pregnancy may result in DNA methylation changes in BDNF gene.

Preterm birth is a risk factor for neurodevelopmental conditions. Epigenetic conditions may result in DNA methylation changes in NR 3C1 gene resulting neurodevelopmental conditions.

Infancy**:** Childhood adversity, parental death parental illness may result in altered DNA methylation. Depression in mothers resulted in DNA methylation changes in infants. Preterm infants were associated increased DNA methylation of NR3C1and decreased methylation of HSD11B2 resulting in neurobehavioral disorders.

Childhood**:** Abuse in childhood may result in DNA methylation of FK506 binding protein which results in reactivity to stress. Sexual abuse in childhood predicts age acceleration in adults.

Child development- mother's reciprocity that is external regulation to the infant's developing immature emotional system during the selected critical periods impact experience dependent growth of brain areas relating to mood and behavior. Attachment behaviors promotes infant and parent proximity. Availability of an attachment figure such as mother has a great influence on the child's reduction in fear. Frequent or prolonged separation from maternal figure leads to stress affecting infant and adult personality. Early social interactions facilitate affective regulation, learning through cues such feeding needs, emotional warmth, sensory stimulation by the caregiver and emotional experiences.[5]. Tactile experiences such as

holding, skin to skin contact and carrying the baby are crucial in the development of the child.[6]

Epigenetic factors, though often implicated, need a lot more research for us to label them as causative. We have some data to show aberrations that occur, however there are many children and adolescents who face tremendous adversity and yet emerge healthy. The epigenetics of such resilience, calls for further research.

III] Impact of Parenting on well being

Parenting is another environmental factor which might have an impact of overall child development. Family interaction and experiences impact the genetic variant and influences behavioural and developmental outcomes.[7]. Child rearing practices or parenting practices involve specific behaviours that parents use to interact and socialize with their children. Parenting practices involve disciplining, positive reinforcements, problem solving, ensuring child's health and safety, preparing child to become productive adults and transmitting cultural value.[8,9] However, parenting alone cannot be implicated as causative. It is always a multi-modal impact of various factors that ultimately help the child to develop.

Parenting and epigenetics: There is an association of maternal positive caregiving behaviours such as stroking the child, sensitivity and responsiveness associated with reduced NR3C1 methylation at specific sites.[10]

Transgenerational parenting: Parenting styles are similar from one generation to another. Expression of mothering behavior is associated with prior life experiences. A significant degree of continuity exists positive and harsh parenting in both males and females across the different generations.[11] A positive early experience later predicts maternal behavior. Less authoritarian, positive climate in middle childhood and positive attachment in adolescence predicted warm, sensitive and stimulating maternal behavior in adulthood.[12]

Parenting involves nourishing, protecting and guiding a child through the course of development. Parenting style implies parental attitude and behaviour consistently used across the different contexts to manage children's behaviour and is determined by patterns of control, responsiveness, warmth and punishment.

Baumrind (1971) first gave parenting styles and classified them into three types – authoritarian, authoritative and permissive parenting styles. This is based on interaction between parent and child along two dimensions of parental control/expectation/demanding ness and parental warmth.

An authoritarian parent – Highly demanding with low level of autonomy and is less responsive.

An authoritative parent – Highly demanding and grants autonomy. Communication is open and bilateral.

A permissive parent – Grants high level of autonomy and is less demanding.

Further, Maccoby and Martin(1983) differentiated permissive parenting into permissive – indulgent and permissive indifferent. Permissive indulgent are parents who highly involved in the child's care and permissive indifferent refer to parents who are uninvolved and neglectful

who show responsiveness and demandingness. This is at times termed as the fourth type, or simply *neglectful parenting*.

In parents who demonstrated high levels of control, aggression, anxiety, depression and problem behaviours in children were seen. Children who displayed autonomy supported behaviour, had intrinsic motivational orientation and low risk of being bullied over the years than those provided with little support for autonomy. Authoritative parenting style is found to have the best positive outcome. Adolescents with authoritative parents were protected against substance use than those whose parents were perceived as uninvolved. Authoritative parenting and parental warmth serves as a buffer against suicide and harmful consequences. [7]

Parenting in families with special needs

Families are an essential support for children with disabilities. Children with special needs warrant the families' time, emotional resources and is associated with increase in cost of care. Mothers of children with intellectual developmental disorder were found to experience more depression than those of typically developing children. Families with children with behavioural problems experienced an increase in burden and stress. It was also associated with poor parenting efficiency, poorer mental health and poor marital adjustment. Family burden and stress increased with personal care needs, adaptive behaviour deficits and medical needs. A positive outlook on childhood disability correlates with decreased feelings of stress and burden. Positive appraisals led to better coping.[13]

Parenting children with neurodevelopmental disorders and externalising disorders was associated with less positive, less consistent and ineffective parenting behaviours.[14] Experience of stress in parents limits their abilities to cope and support to the children diminishes.[15] Hence while parenting a child with special needs, apart from an limit setting, a certain degree of acceptance and permissiveness both, are needed.

A common finding in siblings of a child with special needs in experience of stress, low self – esteem, internalized behavior problems, academic problems, stigma from peers and sensitivity to typical family stressors.[16] Hence, the clinician must be aware and identify difficulties faced by the sibling and appropriately intervene. Siblings need to be involved early on in the family counselling session, so they share a healthy relationship with the special needs child, and can help with the environmental stability needed by the said child. This also gives the parents tremendous support in their children's adult years, as they know that the special needs adult will be cared for after them.

IV] Effective communication with younger children:[17]

Communication is often an extension of parenting per se. However, communication occurs in various environments that the child is exposed too. Viz. schools and homes, and can impact their overall well being.

- Communication – verbal includes pitch and tone of voice, words and dialect.
- Non-verbal communication – facial expressions, eye contact, personal space, hand gestures and physical touch like a hug.

UNICEF lays down 9 ways to communicate effectively with children.

A. Active listening – helps them feel heard. Using gestures such as nods and smiles help them understand care and involvement from the caregivers. Getting down to the same level as your child as they speak to you can help them feel safer and more connected to you. Listening intently and asking questions to them and using stories to communicate helps engagement.
B. Reflective listening – repeat back in different words conveying that you have understood.
C. Speaking clearly
D. Avoiding bribes
E. Explaining feelings – enable them to learn how to name feelings and empathic listening while they share their feelings
F. Noticing statements – praise the child for the good actions. Instead of saying "good job" being specific with a noticing statement, " I noticed that you put all your toys away after playtime. That is very good."
G. Having fun together.
H. Focusing on behavior and not the person. For eg, "I don't like that you are messy." Can be reframed to " I don't like it when you leave your clothes all over the floor."
I. Lead by example.

V] Impact of schooling on normal development and well-being

Well being and life skills as a measure of mental health, becomes imperative to include in school curricula and teacher training curricula as well. The approach needs to be focused, scientific and cost effective. The National Education Programme(NEP) aims to achieve some of the above. As psychiatrists, it is important for us to encourage the same, to achieve a generation of healthy and well developed youth.

Aspects of schooling and education on child development and well being

- Curricular design
- Inclusivity
- Teacher Training and the awareness of newer developments
- Parent Teacher Interaction

a. Curricular design

Curricular design in schools plays a crucial role in the normal development and overall well-being of children and adolescents. The curriculum, which includes the subjects, teaching methods, and learning experiences provided by the school, can shape various aspects of a student's life, from their academic achievements to their social and emotional development. A holistic curriculum includes physical activities, interspersed with academics. There should also be an exposure to community work, art and craft, visits to and discussions on various occupations like street cleaners, carpenters, janitors etc. to inculcate a sense of dignity of

labour and respect in the minds of students. If possible, skill based courses such as painting, carpentry, cleaning etc. can be introduced in school itself. Here are some ways in which it can help[18] –

i. *Academic Development***:** The curriculum determines what knowledge and skills students acquire during their educational journey. A well-designed curriculum can provide a balanced and comprehensive education that fosters intellectual growth and academic success.
ii. *Social and Emotional Development:* The curriculum can influence the social and emotional development of students by promoting positive interactions, teamwork, and empathy. A supportive and inclusive curriculum can create a safe and nurturing environment, reducing stress and anxiety while promoting a sense of belonging and well-being.
iii. *Physical Development:* Curricular design can incorporate physical education and sports programs, encouraging regular physical activity and promoting physical well-being. By emphasizing the importance of a healthy lifestyle, the curriculum can instil lifelong habits of exercise and self-care.
iv. *Cognitive Development:* A well-structured curriculum can stimulate cognitive development by providing age-appropriate content and learning experiences. The curriculum can expand students' cognitive abilities and help them develop a thirst for knowledge.
v. *Cultural and Global Awareness:* Curricular design can expose students to diverse cultures, traditions, and global issues. It can also encourage global awareness, preparing students to be responsible global citizens in an increasingly interconnected world.
vi. *Career and Life Skills:* The curriculum can include practical skills that prepare students for future careers and life beyond school. By developing these skills, the curriculum enhances students' self-confidence and their ability to navigate real-world challenges.
vii. *Individualized Learning:* A flexible and inclusive curriculum design allows for individualized learning experiences tailored to students' needs, interests, and abilities. This also includes learning from external sources, which may have both positive and negavtive consequences.
Life skills training – Life skills training involve the training in adaptive and positive behavior enabling individuals to effectively address daily challenges, stress in daily life and demands. They particularly involve the decision making and problem solving, critical thinking and creative thinking, communication skills and interpersonal relations skills, coping with emotions and stress, self awareness and empathy.

b. Inclusivity

Inclusivity in schools is vital for the overall well-being of children and adolescents. When schools prioritize inclusivity, they create an environment where every student feels valued, respected, and supported, regardless of their background, abilities, or

identities. Inclusive schools and colleges cater to students across all strata of society, and across intelligence levels and medical diagnosis. In short, no child should not go to school, because the school cannot 'cater to' or 'manage' such a child. School infrastructure and personnel have to be trained to manage the same. An inclusive environment helps in the following ways[19] –

i. *Sense of Belonging:* Inclusive schools foster a sense of belonging among all students. When students feel accepted and included, they are more likely to develop positive self-esteem and a sense of identity.
ii. *Emotional Well-being:* Inclusive schools provide a safe and supportive space for students to express their emotions, concerns, and challenges.
iii. *Academic Achievement:* Inclusive schools prioritize individualized learning and support for all students. They recognize and address diverse learning needs and provide appropriate accommodations and resources.
iv. *Social Skills and Relationships:* Inclusive environments foster positive social interactions and friendships among students from various backgrounds and abilities.
v. *Reduced Stigma and Bias***:** Inclusive schools challenge stereotypes, prejudices, and biases. They create opportunities for students to learn about different cultures, abilities, and identities, promoting acceptance and understanding.
vi. *Supportive Services and Resources:* Inclusive schools provide access to a range of support services and resources to address students' diverse needs. These may include counselling, special education, language support, and mental health services.
vii. *Empowerment and Advocacy:* Inclusive schools empower students to become advocates for themselves and others. They encourage students to voice their opinions, engage in decision-making processes, and take leadership roles.

c. Teacher Training and the awareness of newer developments

Teacher training and awareness of newer developments in their field are crucial for both the well-being of teachers and the quality of education they provide to children and adolescents in the following ways[20] –

i. *Professional Growth:* Ongoing teacher training helps educators stay updated with the latest research, pedagogical approaches, and best practices in their field.
ii. *Increased Effectiveness:* Training and awareness of newer developments enable teachers to implement innovative teaching strategies and instructional methods in their classrooms.
iii. *Reduced Stress:* When teachers are well-trained and aware of effective teaching techniques, they are better equipped to handle the challenges and demands of their profession.
iv. *Collaboration and Support:* Teacher training often includes opportunities for collaboration and professional networking. Educators can connect with colleagues, share experiences, and learn from one another.
v. *Adaptation to Changing Needs:* The field of education is constantly evolving, with new technologies, research, and educational policies emerging. Teacher training

ensures that educators stay abreast of these changes and are prepared to address the evolving needs of students.

vi. *Personal and Professional Reflection:* Training and awareness programs often provide opportunities for self-reflection and self-improvement. Teachers can assess their teaching practices, identify areas for growth, and set professional goals.

vii. *Well-being Promotion:* Teacher training programs are increasingly incorporating well-being initiatives to support the mental, emotional, and physical health of educators.

d. Parent Teacher Interaction

Parent-teacher interaction plays a crucial role in the well-being and development of students. When parents and teachers collaborate and maintain open lines of communication, it creates a supportive and nurturing environment that positively impacts the overall growth of the child in the following ways.[21]

i. *Academic Success:* Regular communication between parents and teachers enables the sharing of valuable information about a student's progress, strengths, and areas needing improvement.

ii. *Emotional and Social Development:* Parents and teachers each bring unique insights and perspectives to a student's life. By sharing information about a child's emotional well-being, behaviour, and social interactions, parents and teachers can work collaboratively to create a consistent approach in supporting the student's social and emotional development.

iii. *Individualized Support:* Effective parent-teacher interaction allows for a comprehensive understanding of a student's strengths, weaknesses, learning style, and interests.

iv. *Consistency and Reinforcement:* When parents and teachers align their efforts, it reinforces consistent expectations and values in a student's life. Consistency in discipline, routines, and reinforcement of positive behaviours at home and school promotes stability.

v. *Early Identification of Issues:* Parent-teacher interaction facilitates the early identification of any potential challenges or developmental issues a student may be facing. When parents and teachers work hand in hand, students thrive, and their potential is maximized.

National Education Program and its impact

The National Education Policy (NEP) is a comprehensive framework for transforming the education system in India. It aimed to address various challenges and issues in the existing system while focusing on the holistic development of students. The NEP could have several potential effects on the youth in India:[22]

i. *Holistic Development:* The NEP emphasizes a multi-disciplinary approach to education, encouraging students to explore a wide range of subjects and develop a well-rounded skill set.

ii. *Vocational Education:* The policy stresses the importance of vocational education, providing practical skills and training to students. This can help young people become more employable and reduce the skills gap, enabling them to enter the workforce with relevant expertise.
iii. *Flexibility and Choice:* The NEP proposes increased flexibility in the education system, allowing students to choose subjects based on their interests and capabilities, allowing youth to pursue fields that align with their passions and aspirations.
iv. *Promotion of Regional Languages:* The NEP aims to promote regional languages as mediums of instruction up to a certain level, which can help preserve cultural diversity and strengthen students' connection to their roots.
v. *Technology Integration:* The policy encourages the integration of technology in education, which can improve access to quality education and equip young learners with digital literacy skills.
vi. *Higher Education Reforms:* The NEP proposes changes in the higher education system, including multidisciplinary institutions and increased emphasis on research and innovation.
vii. *Focus on Early Childhood Education:* The NEP recognizes the importance of early childhood education and aims to provide a strong foundation for young learners.
viii. *Teacher Training and Professional Development:* The policy highlights the need for teacher training and professional development to improve the quality of education.
ix. *Reducing Examination Stress:* The NEP proposes changes in assessment and evaluation methods to reduce the stress associated with exams.

A holistic approach to education, along with welfare and training of educators, can have a profound impact on well being in children; and we hope the NEP finds actual implementation in our country, and does not remain only as a white paper.

VI] Impact of the environment on well-being

Environment change is taking a toll on the human race,as we well know. The impact on children is direct(as seen with adults) and indirect(as a consequence on impact on mother and therefore transmission through affected genetic material)[23]

a. Healthy Environment

A healthy environment can have a profound and positive impact on the well-being of children and adolescents. When children grow up in an environment that supports their physical, emotional, and social needs, they are more likely to experience positive outcomes and develop into resilient and well-adjusted individuals. Here are some key ways in which a healthy environment can benefit child and adolescent well-being:
WHO and UNICEF data on physical well being and correlation with mental wellbeing

i. *Physical Health:* A clean and safe environment with access to nutritious food, clean water, and adequate sanitation facilities can promote better physical health. Children

who grow up in such environments are less likely to suffer from malnutrition, waterborne diseases, or exposure to environmental toxins. Protective association between physical activity and emotional problems was observed. (Bell S, Audrey S, Campbell R, 2019)

ii. *Mental and Emotional Well-being:* A healthy environment can create a supportive and nurturing atmosphere that fosters positive mental health for children and adolescents.
iii. *Social Development*: A healthy environment that encourages positive social interactions, empathy, and cooperation can promote healthy relationships with family members, peers, and the broader community.
iv. *Academic Achievement*: A conducive environment for learning, including well-equipped schools, competent teachers, and supportive educational resources, can positively impact academic achievement and cognitive development in children and adolescents.
v. *Physical Activity and Play:* A healthy environment with access to safe and stimulating play spaces encourages physical activity and outdoor play. Regular physical activity is essential for physical health, motor skills development, and overall well-being.
vi. *Resilience and Coping Skills:* Growing up in a healthy environment can contribute to the development of resilience and coping skills in children and adolescents. They learn to adapt to challenges, bounce back from setbacks, and develop problem-solving abilities.
vii. *Role Modeling:* In a healthy environment, children are more likely to be exposed to positive role models, such as supportive parents, caring teachers, and responsible community members. These role models can have a significant impact on their values, attitudes, and behaviors.
viii. *Long-term Outcomes:* Children and adolescents who grow up in a healthy environment are more likely to experience positive long-term outcomes, such as higher educational attainment, better employment opportunities, and overall life satisfaction.

b. Impact of Exercise

Exercise has a wide range of positive impacts on children and adolescents, influencing their physical health, mental well-being, cognitive development, and social interactions. Regular physical activity is essential for young individuals' overall growth and development. Here are some of the significant benefits of exercise for children and adolescents:[24]

i. *Physical Health:* Regular exercise contributes to better cardiovascular health, improved muscular strength and endurance, and increased flexibility and balance.
ii. *Bone Health:* Weight-bearing exercises, such as running and jumping, promote bone density and strength, reducing the risk of osteoporosis later in life.
iii. *Motor Skills Development:* Physical activity helps develop gross and fine motor skills in children, enhancing their coordination and control over body movements.

iv. *Brain Health and Cognitive Development:* Exercise is linked to improved cognitive function, attention, and academic performance. It can enhance memory, information processing, and problem-solving abilities.

v. *Mental Health and Emotional Well-being:* Regular physical activity is associated with reduced stress, anxiety, and symptoms of depression in children and adolescents. Exercise triggers the release of endorphins, the "feel-good" hormones, which can improve mood and overall mental well-being.

vi. *Sleep Quality:* Engaging in regular physical activity can promote better sleep patterns, leading to improved sleep quality and overall restfulness.

vii. *Social Skills and Teamwork***:** Participating in team sports or group exercise activities fosters social interactions, communication skills, and teamwork abilities.

viii. *Self-Confidence and Self-Esteem:* Achieving physical milestones and improvements in sports or activities can boost self-confidence and self-esteem in children and adolescents.

ix. *Time Management and Discipline:* Regular exercise requires commitment and discipline, teaching children to manage their time effectively and follow a routine.

x. *Healthy Habits Formation***:** Encouraging regular physical activity during childhood lays the foundation for a lifelong commitment to healthy habits and an active lifestyle.

xi. *Positive Body Image:* Engaging in physical activity can help children and adolescents develop a positive body image and a healthy attitude toward their bodies.

xii. *Conflict Resolution and Emotional Regulation:* In team sports, children learn conflict resolution skills and emotional regulation through interactions with teammates and opponents.

c. Impact of Nutritional Awareness

Nutritional awareness plays a significant role in the health and well-being of children and adolescents. When young individuals are informed about the importance of healthy eating habits and make conscious choices about their nutrition, several positive impacts can be observed:[25]

i. *Improved Physical Health:* Nutritional awareness promotes the consumption of balanced and nutritious foods, providing essential nutrients for growth and development.

ii. *Healthy Growth and Development:* Adequate nutrition supports proper growth and development during childhood and adolescence, ensuring that children reach their full potential in terms of height, weight, and cognitive abilities.

iii. *Cognitive Function and Academic Performance:* Proper nutrition is essential for optimal brain development and cognitive function. Nutritional awareness can lead

to better food choices, positively impacting concentration, memory, and academic performance.

iv. *Energy Levels and Physical Performance:* A balanced diet provides the necessary energy for physical activities and sports. Nutritional awareness helps young individuals fuel their bodies appropriately, enhancing endurance, strength, and overall athletic performance.

v. *Reduced Risk of Eating Disorders:* Nutritional awareness can promote a healthy relationship with food and reduce the likelihood of developing eating disorders like anorexia or bulimia.

vi. *Positive Body Image:* Understanding the role of nutrition in maintaining good health helps young individuals develop a positive body image and self-esteem, focusing on overall well-being rather than appearance alone.

vii. *Better Mental Health:* Proper nutrition contributes to better mental health, reducing the risk of mood disorders like anxiety and depression.

d. Impact of Microplastics on Children and Adolescents:[26]

i. *Health Concerns:* Microplastics are small plastic particles that can be ingested or inhaled. Studies have shown that microplastics can enter the human body through various sources, including contaminated food, water, and even air.

ii. *Endocrine Disruption:* Some microplastics contain additives, such as phthalates and bisphenols, that can disrupt the endocrine system. These disruptions can lead to hormonal imbalances and may affect growth, development, and reproductive health in children and adolescents. This possibly starts in utero, due to maternal exposure, and is hypothesised to be the cause of many changes in the basic human genome.

iii. *Respiratory Issues:* Microplastics in the air can be inhaled and may cause or exacerbate respiratory issues in children, such as asthma or other respiratory problems.

iv. *Environmental Justice:* Children and adolescents from marginalized communities may face a disproportionate burden of microplastic pollution due to living in areas with higher levels of plastic waste and pollution.

e. ***Impact of Global Warming on Children and Adolescents:***[27]

i. *Health Risks:* Global warming is linked to an increase in extreme weather events, heatwaves, and air pollution, all of which can directly impact children's health.

ii. *Nutrition and Food Security:* Climate change affects agriculture and food production, leading to disruptions in food supply and nutrition. Children in vulnerable regions may face food insecurity and malnutrition as a result.

iii. *Migration and Displacement:* Climate-induced changes, such as sea-level rise and extreme weather events, can trigger displacement and migration, which can be particularly challenging for children and adolescents, disrupting their education, social networks, and mental well-being.

iv. *Mental Health:* The uncertainty and fear associated with climate change, including its long-term consequences, can contribute to anxiety, depression, and eco-anxiety in children and adolescents.
v. *Education Disruption:* Extreme weather events can disrupt education infrastructure and access to schooling, impacting learning opportunities and educational outcomes for children.
vi. *Future livelihoods:* The long-term effects of climate change, such as loss of biodiversity and changes in ecosystems, may affect future job prospects and economic opportunities for adolescents.
vii. *Inequitable Impact:* Children and adolescents in low-income countries and vulnerable communities are often more susceptible to the impacts of global warming due to limited access to resources and adaptive measures.

f. Community involvement and awareness

Children and adolescents play a crucial role in community involvement, and their active participation can have a positive impact on mental health, both for themselves and others in the community. Here are some ways in which children and adolescents can contribute to community involvement and promote mental well-being:[28]

i. *Youth-Led Initiatives:* Encourage children and adolescents to take the lead in creating and participating in community projects and initiatives that address mental health issues. Youth-led campaigns, support groups, and awareness programs can help reduce stigma, increase understanding, and promote mental health literacy within the community.
ii. *Peer Support Networks:* Children and adolescents can develop peer support networks to help their peers cope with mental health challenges. These networks can provide a safe space for young individuals to share their experiences, offer empathetic support, and connect with others facing similar issues. These support groups should cover aspects like broken families, break ups, etc.
iii. *Mental Health Advocacy:* Engage young people in mental health advocacy efforts within the community. They can participate in awareness campaigns, speak up about mental health issues, and advocate for improved access to mental health services and resources.
iv. *Community Education Programs:* Children and adolescents can actively participate in organizing and conducting educational workshops or events related to mental health. By sharing knowledge and resources, they can help community members better understand mental health and reduce misinformation and stigma.
v. *Artistic Expression:* Art, music, and other creative forms of expression can be powerful tools to address mental health issues. Children and adolescents can organize or participate in art exhibitions, performances, or storytelling events that highlight mental health themes and promote emotional well-being.
vi. *Youth Mental Health Ambassadors:* Designate and empower young individuals as mental health ambassadors in schools and communities. These ambassadors can

serve as points of contact for peers who need support or guidance related to mental health.

vii. *Volunteering:* Engage young people in mental health-related volunteering activities, such as supporting local mental health organizations, participating in helplines, or assisting in community mental health events.

Engagement in physical activity everyday, low screen behavior and with abstinence from substance use was associated with lesser subjective health complaints. A healthy life style was significamtly associated with lesser subjective health complaints. (Marques A, Demetriou Y, Tesler R, Gouveia E, Peralta M, Gaspar Matos, 2019)

Hence conscious steps towards protection of environment, and working towards involving children in the awareness and protection of environment, both work towards improved overall quality of life and well being.

VII] Recent Trends

a. *Effect of COVID-19*[29]

Maternal stress during pregnancy can have both short-term and long-term effects on the health of both the mother and the child. Stress during pregnancy may increase the risk of complications, such as preterm birth, low birth weight, and developmental issues in the child.
COVID-19 is caused by the novel coronavirus SARS-CoV-2. When it comes to pregnancy, there were concerns about the potential effects of COVID-19 on maternal and fetal health. Pregnant women were initially considered at higher risk for severe illness if they contracted COVID-19 due to changes in the immune system during pregnancy. However, subsequent studies have indicated that the risk for severe outcomes might not be significantly higher compared to non-pregnant adults of similar age and health status.
Studies were being conducted to examine whether babies born to mothers with COVID-19 during pregnancy, often referred to as “COVID-19 babies,” might have different neonatal outcomes compared to babies born to non-infected mothers. While some studies suggested a potential increase in preterm birth rates among COVID-19 positive pregnant women, the data were not always consistent across different studies.

b. *Impact of the Digital Revolution*

The digital revolution, characterized by the widespread adoption of digital technologies, internet connectivity, and the proliferation of smartphones and other digital devices, has had a profound impact on children and adolescents. While digital technologies offer various

opportunities and benefits, they also present certain challenges and risks. Here are some of the key impacts of the digital revolution on children and adolescents:[30]

i. *Access to Information and Education:* Digital technologies have made information more accessible than ever before. Children and adolescents can access educational resources, online courses, and academic materials that can enhance their learning experiences and broaden their knowledge.
ii. *Social Connectivity:* Social media and online platforms have enabled children and adolescents to connect with friends and peers globally, fostering social connections and reducing feelings of isolation.
iii. *Mental Health Concerns:* Excessive screen time, cyberbullying, and exposure to inappropriate content can negatively impact the mental health of children and adolescents. Social media use has been associated with increased rates of anxiety, depression, and sleep disturbances.
iv. *Physical Health and Sedentary Behaviour:* The digital revolution has led to increased sedentary behaviour, as children and adolescents spend more time indoors using digital devices, which can contribute to health issues such as obesity.
v. *Cyberbullying and Online Harassment:* The anonymity provided by digital platforms can facilitate cyberbullying, leading to emotional distress and potential long-term psychological effects on young individuals.
vi. *Privacy and Safety Concerns:* Children and adolescents may unknowingly share personal information online, leading to privacy and safety risks. Online predators and cybercriminals can exploit this vulnerability.
vii. *Digital* Addiction: The constant use of digital devices and social media can lead to addictive behaviours, with some children and adolescents finding it challenging to disconnect and engage in other activities.
viii. *Cognitive Development:* Some studies suggest that excessive screen time, particularly in young children, may impact cognitive development, attention span, and language skills.
ix. *Cybersecurity Risks:* As children and adolescents engage in online activities, they may become susceptible to cyberattacks, scams, or identity theft.
x. *Digital Literacy and Skills:* On the positive side, the digital revolution has emphasized the importance of digital literacy and skills, equipping young individuals with valuable capabilities required for the modern workforce.

c. Dealing with peer pressure

Social media has significantly influenced peer pressure dynamics and can have both positive and negative effects on well-being. Here's an overview of the impact of social media on peer pressure and its effect on well-being:[31]

i. *Comparison and Self-Esteem:* Social media platforms often present a curated version of people's lives, emphasizing achievements, appearance, and experiences. This can

lead to social comparison, where individuals compare themselves to others and feel pressure to meet unrealistic standards.

ii. *Fear of Missing Out (FOMO):* Social media platforms often showcase people's social activities, events, and experiences. Seeing others' posts about exciting or exclusive events can create a fear of missing out (FOMO) and a sense of social pressure to participate in similar activities. This can lead to anxiety, stress, and a constant need to stay connected and be part of the perceived social "in-crowd."

iii. *Body Image and Beauty Standards:* Social media can significantly impact body image perceptions and beauty standards. Influencers and celebrities often promote specific body types, beauty ideals, and beauty products, leading to a desire to conform to these standards.

iv. *Risky Behaviours and Peer Influence:* Social media can amplify peer pressure to engage in risky behaviours. The online sharing of potentially harmful activities, such as substance abuse, dangerous challenges, or self-destructive behaviours, can normalize and encourage participation.

v. *Supportive Communities and Positive Influences:* On the other hand, social media can also foster positive peer pressure and support. Online communities and groups centred around shared interests, hobbies, mental health, and well-being can provide a supportive environment and encourage positive behaviours.

vi. *Cyberbullying and Social Exclusion:* Social media can exacerbate peer pressure by enabling cyberbullying and social exclusion. Negative comments, online harassment, and exclusion from online social groups can severely impact well-being, leading to increased stress, anxiety, and depression.

Encouraging critical thinking, cultivating a positive online environment, and fostering open discussions about the influence of social media can help individuals navigate the pressures effectively. Additionally, fostering offline connections, engaging in activities that promote well-being outside of social media, and setting healthy boundaries with online usage can contribute to maintaining a balanced and positive well-being. Social media conferences/symposia or for a in schools and colleges to introduce and reinforce safety and individuality at regular and periodic intervals.

d. Effect of the gender revolution

The gender revolution, characterized by the ongoing progress towards gender equality and the breaking down of traditional gender roles and expectations, has had a significant impact on well-being.[32]

i. *Increased Individual Agency:* The gender revolution has granted individuals, irrespective of their gender, greater agency and the freedom to explore diverse opportunities and life choices. Breaking away from rigid gender stereotypes and expectations allows individuals to pursue their passions, goals, and interests, leading to a sense of fulfilment and personal well-being.

ii. *Improved Mental Health:* Challenging traditional gender roles and stereotypes has contributed to improved mental health outcomes. By embracing a more inclusive

understanding of gender, individuals are less likely to experience the negative psychological effects of gender-based discrimination, stigma, and prejudice.

iii. *Enhanced Relationship Dynamics*: The gender revolution has had positive implications for relationship dynamics. By challenging traditional gender roles, couples and families have greater flexibility in dividing responsibilities, decision-making, and caregiving.

iv. *Health* and Reproductive Rights: The gender revolution has also brought attention to women's health issues, reproductive rights, and access to healthcare. Advocacy for gender equality has contributed to improved healthcare policies, reproductive healthcare services, and increased awareness about gender-specific health concerns.

v. *Social and Community Support:* The gender revolution has sparked broader social and community support for gender equality and inclusivity. Advocacy movements, support networks, and awareness campaigns have empowered individuals and fostered a sense of solidarity and belonging.

So we see that this generation of children and adolescents are faced with many more challenges and situations, than those prevalent even a decade ago. It is imperative we recognize and address these issues early, to foster care and well being.

VIII

Scales for quality of life and coping in children and adolescents

Scales	Purpose	Age range	Miscellaneous
Youth Quality of Life instrument (YQOL R)	Quality of life	11 to 18 years	Can also be added in chronic conditions
Child Health Questionnaire (CHQ)	Self -scored, Health related quality of life for children and adolescents	5 to 18 years of age	Parent child reported
Kids coping scale (KCS)	Measures stress and coping	7 years and above	Subscore reporting – emotion – focused coping, problem – coping coping and seeking social support.

VIII] <u>Impact of career choices in health and well being</u>[33]

The transition from an educative world(school, college and university) to work is a linear one. Most professional courses do not really have a period training or internship integrated in the course.[34]

As a result, youth are faced with a reality that is different from expectation, which leads to dissatisfaction and unemployment due to unmatching of interests. Career intervention programmes are designed to help bridge the gap between the end of the professional course and choice of a suitable career. Career intervention courses, though not yet widespread globally, are catching on. They lead to more gainful employment, social integration and social contribution.[35]

One of the pioneer work done in this area was in HongKong using the CLAP@JC project to assess career competency. The project involved the following six steps to ascertain career choices:[33]

Step 1: Creating awareness and motivation regarding various possible options for a profession subsequent to a particular course/competency level achieved in education

Step 2: Semi structured learning which involves interaction with mentors and workshops regarding the said profession. This leads to self -assessment and understanding of the desired profession

Step 3: Career counselling. This takes place at an individual and group level, to foster an explorative process through queries of self and others, to gain further insight. Parents too should be involved in this process.

Step 4: Learning through service and volunteering in the community, usually pro-bono or at a nominal stipend to understand the actual functioning and give an added dimension of impact on society

Step 5: Placement in an actual workplace with hands on learning and training on the job. This could be as a shadow or apprentice to someone.

Step 6: Stepping out into the market though career fairs/placement drives and connecting with people having the same philosophy.

In addition to the above, family influence and acceptance also had a significant impact on career choices and well being. It is at times important, to review the career options with at least one session with the entire family, which may help a more favourable outcome in terms of job satisfaction for the child.[36]

It would be worthwhile for Indian colleges and universities to adopt a similar/modified career intervention model to suit the Indian subcontinent. The programme should be integrated with the curriculum in the final year of school, college as well professional courses, to help students make appropriate career choices, and choose the path ahead accordingly, at each step of the way; as well as change paths should that not be attractive or suitable enough.

This becomes even more important in careers like medicine and para-medical courses, where the bond release to be paid is rather huge, and children feel ‘trapped’ in that branch, despite lacking motivation and interest in the same.

Hence this is like a funnel effect or an inverted pyramid approach to career competence

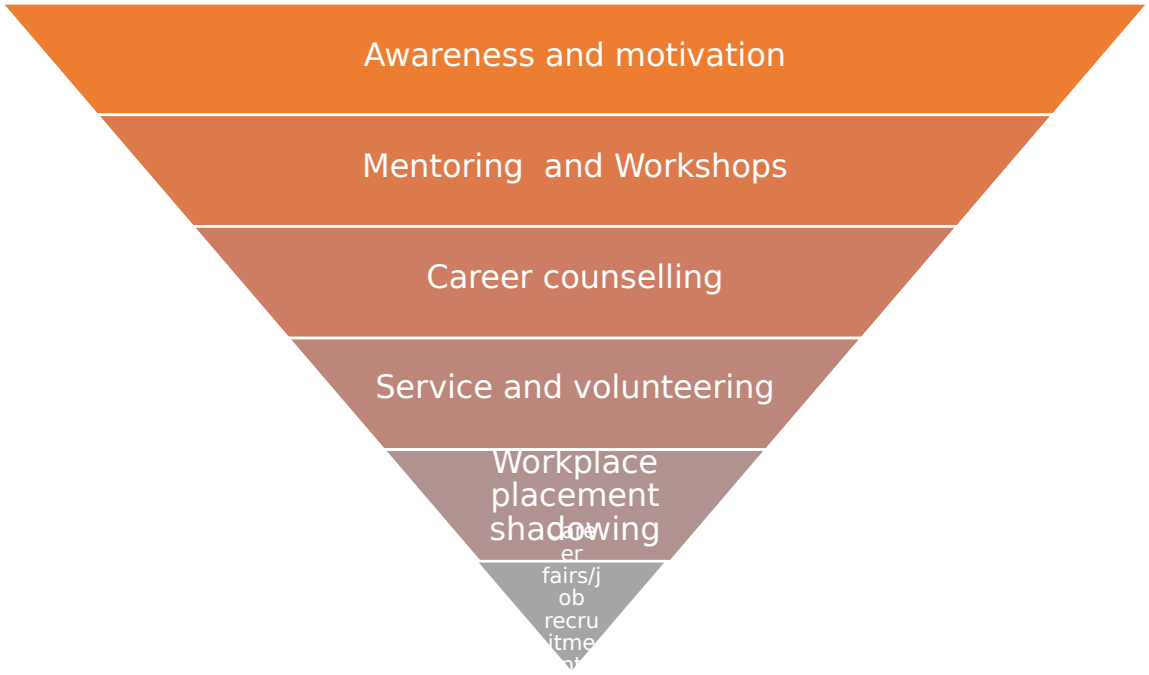


Figure 1. Career Interventions for career counselling

IX] <u>Policies toward Child Well being and development</u>

Whilst it is imperative that we approach well being in a scientific way as medical professionals, the concept itself is largely social. Hence specific policies(either inclusive or deterrant) help toward safe guarding child interests and thereby indirectly impacting well being.

A few of the policies prevalent in India are outlined below: [37]

a. Constitutional Measures:[38]

i. *Article 21 A:* Compulsory education for all from age of 6-14. This subsequently was extended by the *Right to Education Act 2010(RTE)* which endorses compulsory education and freedom from examinations till the age of 14 years. Some states have extended this to 18 years for the girl child.

Education is a fundamental right for all children and both access to and provision for the same is a State mandate. Improved quality of life has been evidenced with better education.[39,]

In addition *Article 45* states the State will endeavour to provide free education till the age of 6 years for all Indian citizens.

ii. *Article 24:* No child below the age of 14 years shall be employed in for work. This was particularly important in areas where children were employed in dangerous places like firework factories etc. This article led to the *Child*

Labour (Prohibition and Regulation) Act,1986 which clearly outlines offences, protection and surveillance through a committee and strict enforcement.

iii. *Article 39(f):* Safeguards provisions for healthy growth and development through opportunities for children. It also safeguards against exploitation and moral abandonment. This article led to the formation of *The Immoral Trafficking (Prevention) Act (ITPA), 1956* which has very stringent measures against child prostitution and trafficking.

b. Legislations pertaining to children and adolescents:

i. *Hindu Adoptions and Maintenance Act 1956*: Applicable for Hindu Undivided Families to ensure that care and maintenance of both girl and boy child are equal. Prior to this act, girls could not be adopted. Today all adoptions are mandated to be regulated under the CARA(Central Adoption Resource Agency)

ii. *The Pre-Conception and Pre- Natal Diagnostic Techniques Act-1994*: prohibits pre-natal gender determination as a measure against female infanticide, making gender determination a cognizable offence.

iii. *The Prohibition of Child Marriage Act, 2006*: Defines age of marriage to be 18 for girls and 21 for boys and anything below this is punishable under thee act. This prevents child marriages and safeguards the welfare of children.

iv. *The Juvenile Justice Act 2000 and Amendment Act-2006(JJ Act)*: It adopts a child centric way of dealing with children and adolescents in conflict with the law. Special courts and judges are appointed for the same.

v. *Protection of Children from Sexual Offences Act 2012(POCSO)*: Has special police force, special protocols for medical examinations and special courts, to penalise offenders with stringent measures and punishments for the same.

vi. *Rights of Persons with Disabilites Act (2016)*: This provides children with concessions at a school and college level, along with reservations for disabled individuals. This is in keeping with the United Nations Charter for Persons with Disabilities. Another unique scheme created by the government is the UDID or Unique Disability ID for these individuals which is valid throughout the country.

c. Child Welfare Measures

i. *The Integrated Child Development Scheme (ICDS)* : This is a scheme that focuses on overall development of the child below six years of age with regards to nutrition, physical health, psychological health and education. This scheme has

achieved great penetration through anganwadi workers throughout the country. Subsequently, *Kishori Shakti Yojana* is an adolescent girl's scheme, which focuses on emotional health and development of adolescent girls.

ii. *Childline 1098, 1996* is a 24x7, free toll free, child helpline started by an NGO under the Ministry for Women and Child Development; where anonymous help can be sought, and attends to children in distress. It is active in 598 districts in India.

d. Framework For Child Welfare and Protection

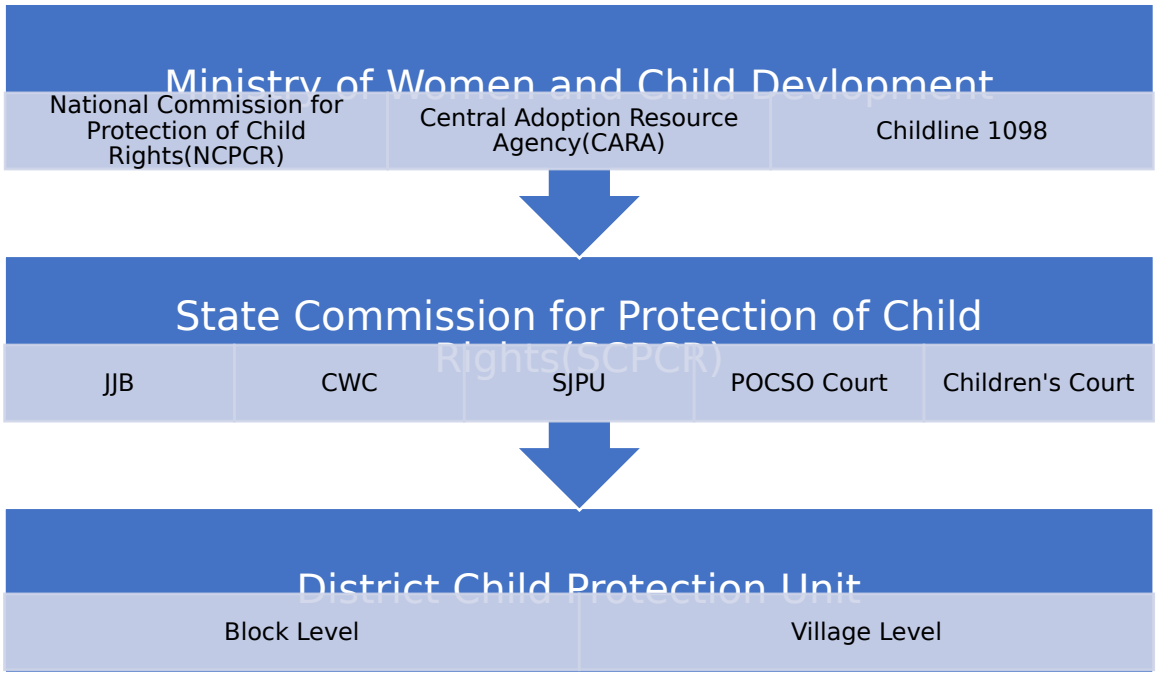
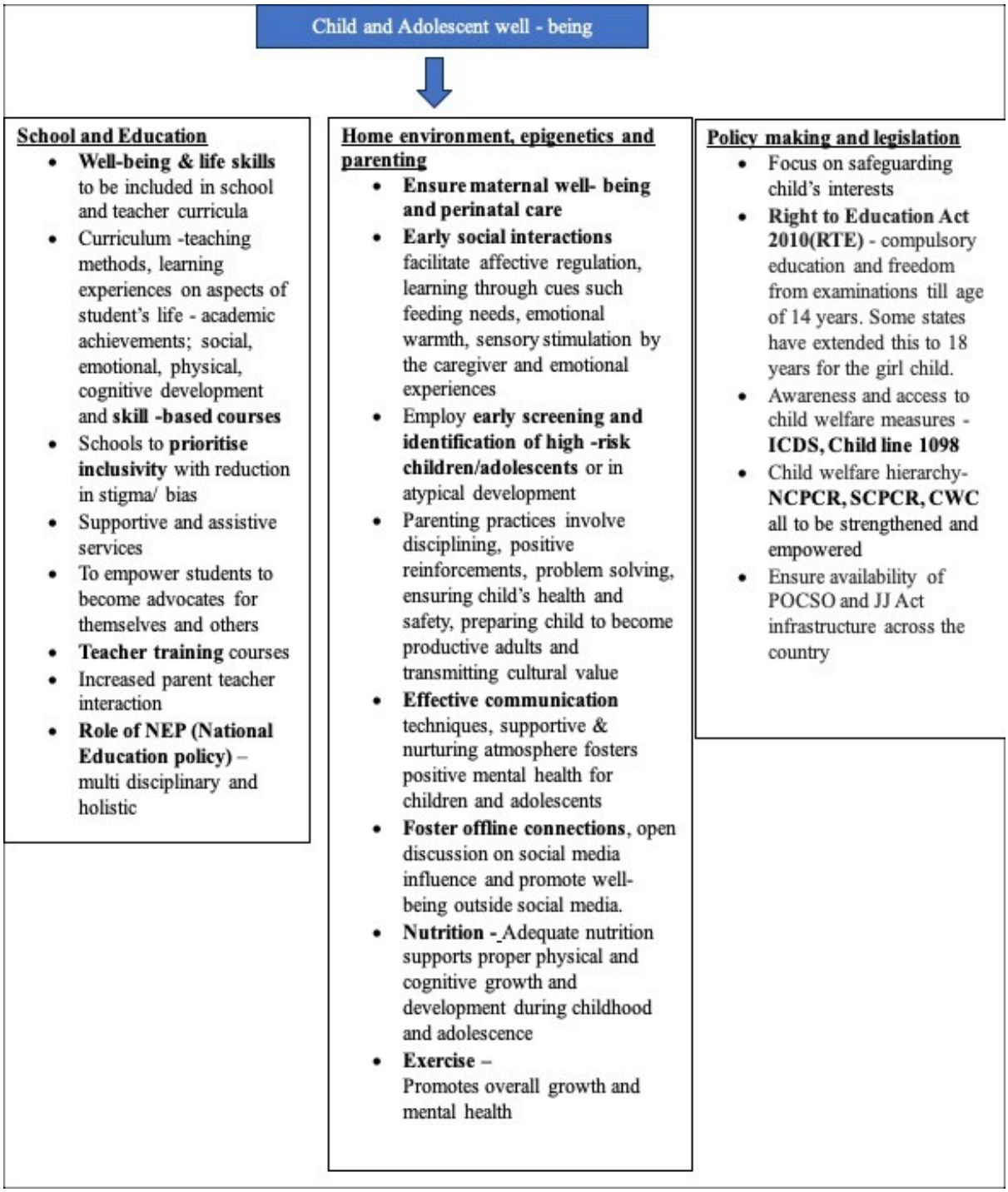


Figure 2. Child Welfare and Protection under Ministry of Women and Child Development
(JJB- Juvenile Justice Board; CWC- Child Welfare Committee; SJPU- Special Juvenile Police Unit)

The other ministries involved are Home Ministry dealing with all legal matters and crime; Ministry of Labour for the labour laws and Ministry of Human Resource and development which decides policies related to education.

In special conditions, children who are homeless and street orphans, are to be protected and taken care off by the state under the The Homeless Orphan and Street Children (Rehabilitation and Welfare Bill, 2008)

XI] Overview of Approach to Child Well Being and Mental Health


Child and Adolescent well - being
School and Education
Well-being & life skills to be included in school and teacher curricula
Curriculum -teaching methods, learning experiences on aspects of student's life - academic achievements; social, emotional, physical, cognitive development and skill -based courses
Schools to prioritise inclusivity with reduction in stigma/ bias
Supportive and assistive services
To empower students to become advocates for themselves and others
Teacher training courses
Increased parent teacher interaction
Role of NEP (National Education policy) – multi disciplinary and holistic
Home environment, epigenetics and parenting
Ensure maternal well- being and perinatal care
Early social interactions facilitate affective regulation, learning through cues such feeding needs, emotional warmth, sensory stimulation by the caregiver and emotional experiences
Employ early screening and identification of high -risk children/adolescents or in atypical development
Parenting practices involve disciplining, positive reinforcements, problem solving, ensuring child's health and safety, preparing child to become productive adults and transmitting cultural value
Effective communication techniques, supportive & nurturing atmosphere fosters positive mental health for children and adolescents
Foster offline connections, open discussion on social media influence and promote well-being outside social media.
Nutrition - Adequate nutrition supports proper physical and cognitive growth and development during childhood and adolescence
Exercise – Promotes overall growth and mental health
Policy making and legislation
Focus on safeguarding child's interests
Right to Education Act 2010(RTE) - compulsory education and freedom from examinations till age of 14 years. Some states have extended this to 18 years for the girl child.
Awareness and access to child welfare measures - ICDS, Child line 1098
Child welfare hierarchy- NCPCR, SCPCR, CWC all to be strengthened and empowered
Ensure availability of POCSO and JJ Act infrastructure across the country

X] Recommendations:

Do's

1. Ensure maternal well being and a safe pregnancy
2. Have policies in place for environmental control
3. Adopt a holistic education policy
4. Early screening and identification of high risk individuals- checklist for typical development
5. Make access and awareness of children in distress easy

Don't's

1. Equate ante-natal women with others and give deadlines, additional work stress
2. Have educational policies and measures that are academically loaded and stressful
3. Invest only in secondary and tertiary medical care
4. Have a huge differential between children and adolescents from privileged homes versus those in not so privileged homes
5. Ignore minority populations like children in orphanages or residential care, adopted children, non binary gendered children etc.

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Mental health and Well-being in Women

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Abstract

Mental Well-being is now an increasingly researched and discussed topic that primarily involves taking care of mental health in a preventive manner and is more of a subjective concept. Mental well-being ensures mental health and measures taken towards it can protect the person's overall health. Discussing and researching this concept is of paramount importance as this will not just safeguard an individual life but the society at large. The lifetime of a woman is multidimensionally unique with a complex interplay of biological, sociocultural and environmental aspects. This demands a diverse variety of factors required to ensure mental well-being in a woman. In addition to this, these determinants vary on the life stage the woman is in. Factors that influence this well-being are also specific when it comes to an Indian context. This chapter considers and discusses in detail the various aspects of the mental health and well-being of women in the pubertal, perinatal and menopausal age groups. Determinants are unique to particular age groups of women and measures to focus on and ensure it will be elaborated on. Finally, recommendations towards policy making are also suggested.

Introduction:

Mental well-being is a fluid and multifaceted concept which exhibiting variations across diverse populations. Women differ from men in numerous dimensions that collectively shape their mental well-being.(1) An example among these factors is the reproductive health of women, which can be divided into three distinct phases: a) Pubertal, b) Perinatal, and c) Perimenopausal health. The mental health considerations within each of these periods are both unique and distinct, as any challenges encountered during these times can significantly impact a woman's mental and physical well-being, and reciprocally, her mental state can influence these pivotal life stages(2).

For optimal mental well-being for women, a comprehensive Three-step strategy can be formulated:

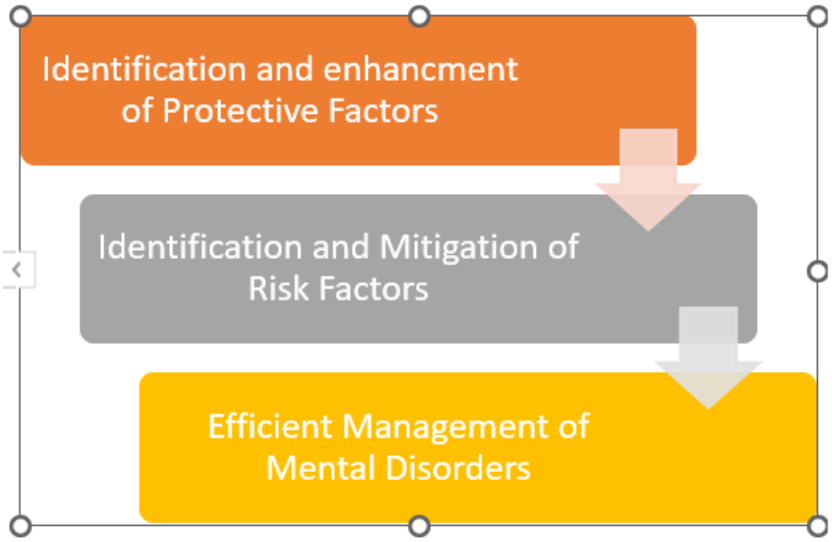

Figure 1: Three Step Strategy to Ensure Mental Wellness in Women

a) ***Identification of Protective Factors***: Recognizing and fostering factors that bolster mental well-being is paramount. Initiating proactive measures to cultivate resilience and emotional strength can significantly contribute to a positive mental health. Education, support networks, and the development of healthy self-perception are all essential components in this regard.

b) ***Identification and Mitigation of Risk Factors***: Identifying potential risk factors that might jeopardize mental well-being is an essential step. By pre-emptively recognizing and addressing factors like societal pressures, hormonal imbalances, and emotional stressors, interventions can be devised to alleviate their negative impact and promote psychological equilibrium.

c) ***Efficient Management of Mental Disorders***: In the event that mental disorders do arise, a well-structured system for their management is imperative. Timely access to mental health resources, including therapy, medication, and support groups, can significantly improve outcomes. Ensuring that women receive the appropriate interventions tailored to their specific reproductive phase can expedite recovery and promote sustainable mental well-being.

By enhancing protective measures, pre-empting risks, empowering resilience, and facilitating effective management, a holistic and comprehensive mental well-being framework can be developed for women across their life journey

The recommendations will be discussed under the following headings:

A. Menarche
B. Perinatal Period
C. Menopause

A) Menarche: -

Menarche is a significant pubertal milestone in girls marking the onset of menstruation. The mean age is 12.5 (±1.42) years. During these early adolescent years, numerous changes manifest both internally and externally(3). Menarche can trigger, exacerbate, or coincide with various psychological and social changes in a girl's life(4,5). It can be best understood as a physiological event that initiates psychological and social transformations, making its discussion imperative in the topic of women's mental well-being.

1. Biopsychosocial changes of menarche:

Menarche is preceded by and associated with numerous alterations in biological, psychological and social aspects as detailed in the table provided below,

Table 1: Biopsychosocial Changes of Menarche

Biological changes	Psychological changes	Social changes

Preceding menarche, adrenarche occurs which involves the appearance of adrenal androgen production, followed by gonadarche which is marked by changes in the Hypothalamic pituitary gonadal axis(5)	Emotionally, girls may undergo a range of mixed feelings, encompassing both positive and negative emotions simultaneously. These emotions may include fear and happiness, anger and enthusiasm, excitement and nervousness, anxiety and pleasure, acceptance and rejection, support and loneliness, self-control and loss of control(6)	In some places, girls are celebrated as they transition into womanhood, receiving gifts and recognition. In contrast, in other regions, it is perceived as an internal wound that requires healing.(6) Studies conducted in India have revealed restrictive practices towards menstruating girls, limiting their participation in school activities and physical pursuits like play, travel, attending social gatherings, functions, festivals, marriages, worship, and imposing food restrictions. Additionally, they may face limitations on entering temples, kitchens, others' houses, engaging in household work, taking baths, attending school, touching people and pooja materials(7)

2. ***Effects of Menarche on Quality of life:***

During the menarche phase, girls tend to grapple with increased internalizing issues and heightened reactivity to interpersonal stressors. Menarche events evoke feelings of loneliness, sadness, and resignation, leading post-menarche girls to experience a lower mood in comparison to their premenarcheal counterparts. Additionally, post-menarche girls often perceive lower self-esteem and reduced satisfaction with their body image. They also exhibit a more pessimistic outlook on the school environment and social acceptance. The post-menarche period exerts a negative impact on various facets of quality of life, including mood, self-esteem, and social relationships.(8,9)

Menarche has been linked to an increased prevalence and exacerbation of pre-existing psychiatric conditions. According to a study conducted on adolescent girls from a UK cohort, those experiencing early menarche (before 11.5 years) exhibited the highest levels of depressive symptoms at ages 13 and 14, in contrast to those with a normative timing of menarche.(10) Additionally, advancing pubertal stages have shown to carry higher risks for depressive symptoms in females. In the case of schizophrenia, research indicates that an earlier age at menarche is associated with later onset of both the first psychotic symptoms and first

hospitalization. Age of menarche is also found to be correlated with the severity of negative symptoms and the course of schizophrenia. Studies have reported that 18% of patients suffering from bipolar disorder experience the onset of symptoms within one year of menarche.(11)

The various strategies which can be used to boost protective factors and mitigate risk factors are during menarche are outlined as below: -

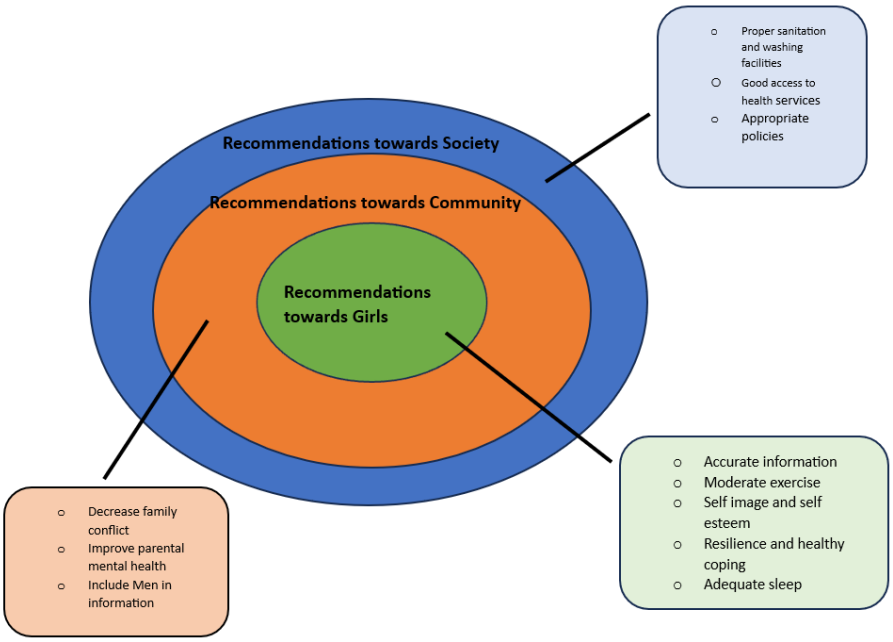

Figure 2: Menarche- Strategies to boost protective factors and mitigate risk factors

3. ***Recommendations for Nutrition during Menarche:***

Childhood nutrition notably affects pubertal development, explaining 25% of puberty timing variation. An Indian study showed lower BMI linked to delayed menarche (11). In Western nations, early puberty might result from excessive processed food consumption. Nutrition not only influences puberty onset but also impacts its progression. Growth spurt during puberty requires more nutrients—calories, protein, iron, calcium, zinc, folate. (12).

Considering these findings, it is recommended that girls during menarche:

a. Maintain a BMI within the normal range.

b. Avoid excessive consumption of processed and fatty foods.

c. Adopt a balanced diet rich in both macro and micronutrients.

By following these recommendations, girls can optimize their nutritional status and potentially improve their pubertal development and overall health and well-being during this critical phase of life.

4. ***Recommendations for Sleep:***

Adequate sleep is essential for the physical and cognitive development of children and adolescents, and it also plays a role in menarche. The relationship between sleep patterns and puberty is bidirectional, changes in sleep patterns can impact the timing of menstruation onset, and conversely, puberty can also lead to alterations in sleep patterns. Physiologically, the explanation behind this association lies in the fact that extended sleep duration can increase the levels of estradiol in the body. One study found that young girls who sleep either less or more than the recommended amount, according to the guidelines set by the American Academy of Sleep Medicine, experience shifts in the age at which they reach menarche(12).

Table 2: Recommended sleep duration, as per the guidelines [13]: -

AGE	Sleep duration
6 to 12 yrs	9 to 12 hours
13 to 18 yrs	8 to 10 hours

5. *Recommendations for Physical activity during Menarche:*

Intense physical activity like those endured by athletes has been shown to delay menarche onset,(13,14) however regular moderate physical activity eases PMS and dysmenorrhea symptoms. Exercise alleviates mood issues, fatigue, cognitive problems, and bloating.(15) While gaps remain in understanding the physical activity-menarche link, it's evident that exercise affects menarche timing, promoting menstrual health and overall well-being for women.(16)

6. ***Recommendations for Self-image and self-identity during Menarche:***

The transformations that manifest during pubertal maturation are associated with shifts in their self-perception and self-esteem. Consequently, these shifts increase the likelihood of developing psychiatric conditions.

Table 3: Strategies to enhance body image and self-esteem in adolescent girls [17,18]: -

a. Educate young girls about the unrealistic standards often portrayed in media.
b. Expose girls to diverse role models who embrace their bodies and demonstrate self-confidence
c. Provide platforms for girls to express themselves creatively
d. Shift the focus from appearance to overall well-being and promote healthy life style
e. Compliment girls on their talents, skills, and character traits rather than just their appearance
f. Create safe spaces for girls to discuss body image concerns and self-esteem issues.

7. ***Recommendations about Resilience and Healthy coping during Menarche:***

Facilitating the cultivation of positive coping mechanisms and resilience in girls against life's challenges will significantly contribute to better mental well-being.

Table 4: Strategies to increase resilience and coping during menarche [17]: -

a. Train them in problem-solving techniques
b. Teach strategies for managing intense emotions.
c. Introduce mindfulness practices and relaxation techniques to manage stress and anxiety.
d. Teach healthy communication skills
e. Emphasize the importance of a strong support network

8. ***Family environment***

Girls raised in stressful family circumstances experience menarche at an earlier age. Stressful family environments, characterized by family conflicts, absence of a biological father, poverty, and inadequate parenting, can lead to the development of internalizing disorders in girls. These disorders can affect their metabolism, resulting in weight gain, which, in turn, accelerates the onset of menarche and disrupt its progression(17) . Other studies have discovered that the mental health of mothers directly and indirectly influences the age at which girls experience menarche.(18) Therefore, addressing the mental health of parents, minimizing interpersonal conflicts between parents and creating a healthier and more conducive family environment are essential steps in optimizing the mental well-being of a adolescent girl during puberty. Recommendations for promoting mental well-being within families are discussed elsewhere in this journal.

9. **Recommendations for Sex *Education during Menarche:***

Numerous studies have emphasized the significant role of comprehensive and accurate knowledge about menstruation in promoting positive mental health among adolescent girls. On the contrary, the lack of or incomplete understanding of menstruation can lead to feelings of surprise, confusion, and fear, resulting in potential long-lasting psychological impacts.

Table 5: Key principles for spreading knowledge about menstruation based on a UNESCO report: -

Age of Education	It is crucial to provide information about menstruation before the onset of menarche to avoid traumatic and lasting psychological effects. A study conducted in India revealed that 40% of girls were unaware of menstruation at the time of menarche. Therefore, it is recommended to initiate reproductive growth education by the age of 9 years(19)
Educators	School teachers along with mothers have crucial roles in educating girls about menstruation, However, some teachers may feel hesitant or

	uncomfortable discussing certain topics, which could impact the quality of knowledge imparted to the girls. Therefore, it is essential to ensure that teachers receive adequate training to deliver skill-based puberty education effectively.(19)
Content of Education	Learning objectives are different for different age levels Below 9 years: - Describing the mental, emotional and physical changes that occur as individuals grow 9-12 years: - Understanding that puberty signals changes in reproductive capabilities and entails a range of social, emotional, and physical changes. Young women should be informed about maintaining good hygiene, including menstrual hygiene practices and the proper use of sanitary pads and other menstrual hygiene materials 12-15 years: - Distinguishing between puberty and adolescence, describing the similarities and differences between boys and girls concerning physical, emotional, and social changes during puberty 15-18 years: - Describing the key emotional and physical changes during puberty resulting from hormonal shifts. Emphasizing that male and female hormones differ and significantly influence lifelong emotional and physical changes, including body shape, size, and body hair growth(19)
Approaches to Education	Approaches encompass peer-led activities, group problem-solving, and dramatization, encouraging active student engagement beyond rote knowledge acquisition. Additionally, incorporating peer leaders to facilitate small-group learning can be advantageous. Leveraging the widespread use of mobile phones presents a potent opportunity for disseminating information and technology. Utilizing mobile phones efficiently allows for the effective spread of education on poverty and health-related subjects.(19)

10. <u>Recommendations regarding educating men:</u>

Boys' attitudes directly influence girls, especially during puberty and menstruation, leading to teasing, discomfort, and embarrassment for girls. Community norms and boys' behaviour play a significant role in contributing to these experiences. An article on boys and young men's understanding of menstruation highlights that they mainly gather limited information through observations at home (with many unanswered questions) and from friends (where myths are reinforced). This lack of accurate information may contribute to the disdainful attitudes exhibited by at least half of the male population(20). Furthermore, the limited presence of female teachers in secondary schools which accentuates the need for increased attention to educate boys and male teachers about puberty. This education can help create less stigmatizing school environments for girls. Additionally, the knowledge acquired in schools regarding menstruation and puberty could positively influence future health-seeking behaviours, such as the utilization of sexual and reproductive health services(19). Therefore, including men in knowledge about menstruation is important for fostering a supportive and understanding environment for girls during their adolescence.

11. Sanitation and washing facilities: -

Water, sanitation, and hygiene (WASH) are essential for the well-being of adolescent girls. The absence of such facilities can have adverse effects on a girl's mental well-being, education, sexual and reproductive health, and sense of dignity. Girls often try to conceal their menstruation while at school while some girls may choose to stay home during their menstruation, which negatively impacts their educational outcome and mental well-being(21).

Table 6: Recommendations to implement sanitation and washing facilities during Menarche [22]: -

a. Separate latrines with locks, handwashing facilities, and sufficient water supply should be made available specifically for girls and female teachers.
b. Provision of changing facilities that can be used by all girls, enabling them to change sanitary protection materials discreetly.
c. Including a small mirror inside the latrine to allow girls to check for spotting or leaking and ensure everything is in order before leaving.
d. Equipping each unit with a washable container with a lid for collecting used sanitary protection materials and wrapping materials
e. collection and disposal of sanitary protection materials, such as in a pit or incinerator should be arranged.
f. Sanitary pads should be readily available in public locations for example via dispensing machines

12. Recommendations for Referral System to health services: -

Ensuring proper care for children facing serious health issues that cannot be addressed at home or school requires a robust referral system that connects health service providers, child protection services, and community support groups.(19)

13. Recommendations for Advocacy and Policy Making supporting Health during Menarche: -

Effective advocacy efforts are necessary to establish comprehensive policies on menstrual hygiene. These policies should not only bring attention to the previously overlooked issue but also offer practical, affordable, and sustainable solutions to the various challenges faced by girls and women. Policies also establish a structured, safe, protective, and inclusive community with guidelines on acceptable behaviour and norms. However, policy alone is insufficient; it requires adequate support, enforcement, and monitoring to be effective. Implementation support and the development of necessary infrastructure and services are essential to ensure the successful implementation of these policies.(19)

B) Perinatal period:-

Definition of Perinatal Period: -

Perinatal period is defined as the time duration in a woman's child bearing live that includes the whole of pregnancy up to the end of the first 4 weeks.(22)

Introduction and background:

Pregnancy, birth and early parenthood may be stressful because they may change women's identity, physical health and economic situation.(23)

Perinatal anxiety and depression in the perinatal period are common, affecting an estimated 1 in 10 women in high-income countries and one in five in low- and middle-income countries (LMICs), indicating the importance of support for PMH globally.(24) Women who already have mental health problems may find that their symptoms worsen during the perinatal period. Others may experience poor mental health for the first time during this period.

European researchers have stated that the perinatal period is a very critical stage in a woman's life. WHO states that during this period, there is no health without mental health. The mental health needs in low and middle-income countries are different as compared to those in high-income countries, which holds true for India. In these economies, not just are the perinatal mental health problems higher, but the subsequent neonatal and developmental problems in the offsprings are also on the higher side.(25)

Pregnancy and the postnatal period are psychologically distressing times for women due to physiological changes. Women experiencing familial conflict, abuse, financial constraints, or complications during pregnancy are especially at risk for developing perinatal depression. (26)

Indian studies reveal the prevalence of perinatal depression to be in the range of 22%. (27)Studies on anxiety, though fewer, also state an estimate of 23%. (28)A surprising amount of 7.6% women in India express to have experienced suicidal ideations during pregnancy which also resorts to maternal mortality, the rates of which were same across all socioeconomic classes.(29)

Mental wellness during the perinatal period is thus of utmost importance and has to be ensured.

Table 7: Components to ensure Perinatal Mental Health: -

- Destigmatization
- Psychoeducation
- Supportive Environments
- Health Care liaisoning
- Promoting positive mental health
- Sleep
- Exercise
- Mindfulness
- Advocacy and Policy Making

A. Role of Supportive environments during the Perinatal Period:

Providing a pregnant or lactating mother with a supportive environment, including physical and emotional safety is necessary. This is the first step towards ensuring a healthy mother and baby. The availability of such an environment will ensure that the woman can voice out her

needs and difficulties without fearing being judged.(30) It is essential that the woman feel that help is approachable and she is not judged when she asks for help. Help must be available at home and outside if required.

Following are the recommendations to strengthen the woman's support system:

1. Encouraging family and friends to speak openly about the needs the woman has. Only when the woman finds it "normal" to talk about her needs, will she be comfortable about it.
2. Involving the partner in all the steps of pregnancy and lactation will benefit tremendously. Partners need to be involved right from antenatal care, sharing of responsibilities to taking care of the child. Sharing this burden will not only ensure the physical and mental health of the woman but also help improve the relationship between the couple.
3. Involvement of the immediate or extended family in making the woman build her comfort zone during this period helps. In this regard, the traditional joint family system of the Indian society can come in very handy with more burden sharing and hence ensuring the mental wellness of the woman.
4. Support also must be available at the workplace. All institutions must have an environment which is conducive for the pregnant or lactating mother to work in and ask for help too.
5. Antenatal and postnatal medical team can be one of the biggest pillars of support during this period. Hence, training them to do the same is beneficial.
6. Social support need not necessarily be emotional, but can also be monetary or practical. Many-a-times working women are asked to leave their jobs in order to be in a safer environment at home, even if they are doing well and probably can continue working without much discomfort. Here the choice must be left to the woman herself as to how would she want to go ahead with her professional status. Community social workers can ensure that these women can stay or get some kind of employment whenever feasible. Workplaces must also provide an option of continuing work and not discriminate with regard to their work.
7. Maternity leave must also be an option available for women to avail without being stressed about leaving the job. This may not provide just financial support for the mother but can also help in developing a better living environment for herself and her family and hence promote her mental wellness.

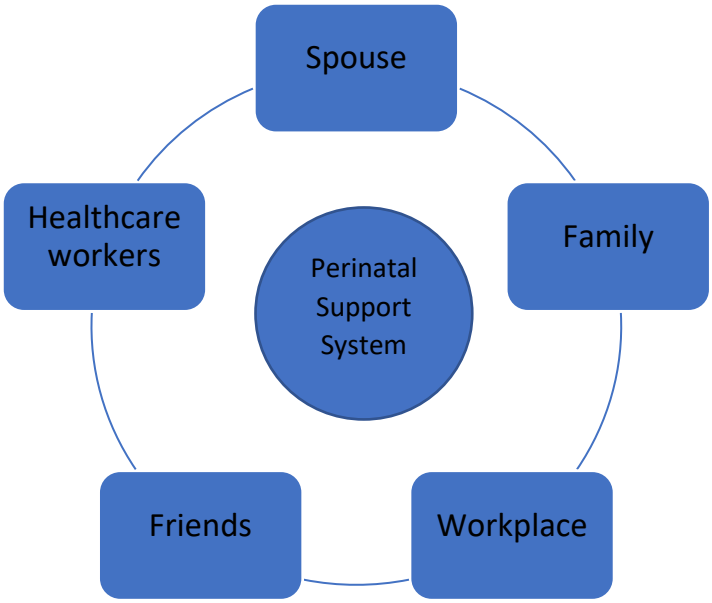

Figure 3: Components of the Perinatal Support System

B. ***Destigmatization of Mental Health Needs during the Perinatal Period***: -

Age old stigmatization leads women to not voice out if they are unwell or aren't doing fine, instead just bear it by themselves.(31)Speaking out about mental health and well-being is often looked down upon. It often gets negative reactions or ridiculed.(32) Women with mental health needs may be considered as a bad mother or an unfit mother and this may prevent her from expressing her needs to maintain her wellbeing. Hence, destigmatisation is of paramount importance. Along with psychoeducation, active methods to reduce the associated stigma needs to be focussed on.

Table 8: Recommendations to achieve destigmatisation of Mental health needs during Perinatal Period: -

a. Psychoeducation of community
b. Psychoeducation of maternal and child care personnel

c. Including mental health curriculum in post-graduate training of obstetrics and paediatrics
d. Integrating mental health services with maternal and child health services
e. Engaging or training counsellors to deal with perinatal mental health needs in institutions.
f. Use of various forms of media to propagate the awareness

C. Harbouring the Protective Factors during the Perinatal Period: -

Perinatal Mental wellbeing must not only focus on detecting mental illnesses or disorders but also strengthening the ability of the woman to detect and cope up with the stresses. The WHO recommends that we need to recognise the protective factors of mental wellness and harbour them. Many a times, it is difficult to ensure that risk factors disappear or minimised significantly. Strengthening these protective factors can hence help build resilience.(33)

Following must be targeted to harbour protective factors-

Table 9: Recommendations to harbour protective factors during the Perinatal Period: -

a. Promote education and improve educational opportunities
b. Generating Financial independence
c. Generating or sharing positive childbirth experiences
d. Providing high quality and competent maternal and child services

D. Psychoeducation of Perinatal Mental Health and Well-being: -

Psychoeducation forms the basis of all supportive care in mental health. Awareness promotes early care and hence improves quality of the perinatal period. Targets for psychoeducation and subsequent prevention can be multiple. The promotion of positive mental health/ mental well-being and the prevention of mental disorders go hand in hand. This is probably best done by the maternal and child health services as a woman in the perinatal period might be in maximum contact with them the most. Lack of awareness of mental Here the responsibility is to a great extent laid on these allied services who may/may not be fully equipped to do that by themselves. Training must also be conducted for ASHA workers, midwives, other community social workers, etc who are a lot more in contact with this subset of women. Psychoeducation must be done with regard to perinatal-induced depression, anxiety, insomnia, psychosis, postpartum depression, and postpartum blues at the least.

Figure 4: Targets for Psychoeducation of Perinatal Mental Well-being

E. Promotion of Positive mental health during the Perinatal Period: -

1. Indian cultural contexts- A lot of behaviours and practices during the perinatal period have a cultural origin where personal attitudes, values and experiences of previous generations are imposed on the expecting or the new mother. Even then, Indian culture has always promoted the wellness of the pregnant and lactating mother under the aegis of "Garbhasanskar".(34) Here a lot of practices do involve keeping the mother stress-free and hence promoting mental wellbeing. The traditional outlook of the elders of the household towards the care and well-being of the pregnant woman stands validated here.
2. Relaxation exercises- The importance of simple relaxation and breathing exercises needs to be stressed on as a routine practice for maintaining a stress-free lifestyle. Other destressing strategies like speaking with a friend, meditating, pursuing hobbies,

listening to music and being involved in social gatherings are often undervalued in maintaining mental well-being and should be promoted.

3. Structures or Routines - Many times, with such a big change comes a loss of structure to the daily life which can spiral and circle back into creating more problems for the woman. Thus, stressing the regularity of a daily routine or schedule can work wonders for a lot of them.
4. Breaking age-old myths- Breaking myths about food during the perinatal period will benefit in maintaining a balanced diet and good physical health of the woman. Intermittently indulging in favourite foods which can elevate mood must not be completely discouraged.
5. Sharing experiences- Getting involved or promoting women to speak to other women in the perinatal period via a support group facilitated by either community workers or perinatal health workers will act as a good support system.

a. Relaxation and Breathing exercises
b. Yoga / Pilates
c. Pursuing Hobbies
d. Meditation
e. Using Music
f. Journaling / Speaking to loved ones
g. Participating in social gatherings

Table 10:- Recommendations to Promote Positive Mental health:

F. Role of Sleep during the Perinatal Period: -

Sleep disturbances and changes in the sleep cycle are very commonly overlooked and considered not worthy of paying enough attention to even if the woman complains. Many women have poor sleep quality, disturbed sleep or even insomnia. (35) Sleep problems during the perinatal period influence the mother's and subsequently the child's mental well-being. The prevalence of perinatal insomnia relating to poor sleep quality often leads to perinatal insomnia which can even continue later in life. (36) This in turn makes the woman predisposed to perinatal anxiety and depression. (37) Not only that but insomnia during perinatal period makes the woman vulnerable to cardiometabolic problems as well as complications in childbirth which can lead to neonatal complications. Hence interventions in sleep or maintaining or addressing the so called "normal" sleep disturbances of pregnancy at the right time can be highly beneficial for the prevention of further perinatal and neonatal complications. (38) Of course individual interventions for maintaining sleep patterns are necessary, but there also has

to be a bigger implementational focus on acting on the factors that add to the development of sleep issues like domestic violence, poor living conditions and unemployment. Simple educational tools about sleep and its importance in the perinatal period, must be a routine part of the perinatal services which the woman accesses. Maintaining sleep hygiene must be emphasized on at every visit which would probably be have to be done on the health care visits at the obstetrician. The sleep duration may vary from woman to woman but a minimum duration of 8-10 hours of peaceful sleep is a must. Apart from this, women must use home remedies like music and herbal tea or other natural sleep inducers to maintain the sleep quality. (39)

G. Role of Exercise during the Perinatal Period: -

The role of exercise in mental well-being is well established. Similarly, exercise during the perinatal period is recommended to most women in order to maintain their physical and mental well-being. There are often many misconceptions regarding any physical exercise during this period but those need to be busted by the health workers which the woman visits. Light exercise like walking, jogging, simple yoga poses, cycling, pilates and even swimming can be recommended. A light exercise schedule of at least 30 mins every day must be promoted by the healthcare worker whom the woman is in contact with. At the same time, the woman must also be informed about warning signs like shortness of breath, vaginal bleeding, chest pain, contractions or dizziness and the need to stop exercise and consult the obstetrician. Indian culture and tradition have always seen yoga as an integral part of wellbeing and must be utilised maximally to ensure that we protect the mental health of these women and hence their offspring.

Table 11: Recommendations for Physical exercises during the Perinatal Period: -

RECOMMENDED PHYSICAL EXERCISES:	EDUCATE FOR WARNING SIGNS:
- Walking/jogging	- Shortness of Breath
- Simple yoga poses	- Vaginal Bleeding
- Cycling	- Chest pain
- Pilates	- Contractions
- Swimming	- Dizziness

H. Role of Mindfulness during Perinatal Period: -

The general nature of the multiple stresses that a woman goes through during the perinatal period may lead to negative thoughts and emotions which may not amount to any disorder or illness but still needs attention.

Identifying and working on these before it can become problem maybe the best way forward. Preventive methods are the best way to make sure that the mental wellness be ensured and doesn't become problematic.(40,41)

Incorporating mindfulness strategies for women in perinatal period has shown to have many benefits in perinatal wellness and preventing any major psychological problem. (42)Interventions like these also improve the general quality of life and life satisfaction of the woman which will help them not only during the perinatal period but will also ensure the wellbeing during motherhood and eventually a healthy child. Mindfulness also helps the mothers, especially first-time mothers to deal with the fear and worries associated with childbirth and infant caring and promotes sensitive parenting techniques which will go a long way to ensure mental wellbeing. (43,44) Mindfulness training can be incorporated as a general wellness training in community health programs which are taken up by community workers locally or optionally can also be available as services which are available at perinatal women services at the hospitals and clinics. Mindfulness apps are available freely and can be promoted.

1.Liaising with other health care professionals:

WHO recommends active involvement of other health care and allied professions in maintaining mental wellness of women in the perinatal period.

A stepped care approach is extremely important in dealing with the mental health needs of women in the perinatal period.(30,45)

A stepped care approach will ensure adequate utilisation of the available health care services.

- Sensitisation of perinatal mental health in allied professionals
- Training in identification and screening of women
- Developing and implementing simple screening tools
- Train health care professionals to provide primary care
- Develop a strong referral system for advanced care.

Some suggestions for other health care professionals include practicing a few practices like showing respect, courtesy and empathy towards the woman.

Addressing psychological distress during the perinatal period in an appropriate way makes circumstances better for the woman and her baby in the contexts in which they are living. Health workers attitudes and behaviours are of fundamental importance to promoting mental health. Respectful, courteous, empathic, non-judgemental behaviours and provision of information, encouragement and praise promote optimal mental health for all. The principles guiding the recognition/ identification of mental health problems of women in the perinatal period are the same that apply to assisting women with their other health needs.

Active listening to each one of their problem should be a routine practice. Being non-judegmental towards any disclosure made by the woman must always be the case in order to make the woman feel comfortable and some she should be provided with help if she asks for. All these practices may help to ensure mental wellness of the woman. (41)

To guarantee that we aid and promote mental wellness via other perinatal health care workers, it will require that mental health professionals nurture better and productive liasoning with them.

Educating and training all medical and allied perinatal health care professionals to promote mental wellness, recognise poor or problematic and refer to mental health care services must be a part of a bigger implementation process at institutional and governmental levels.

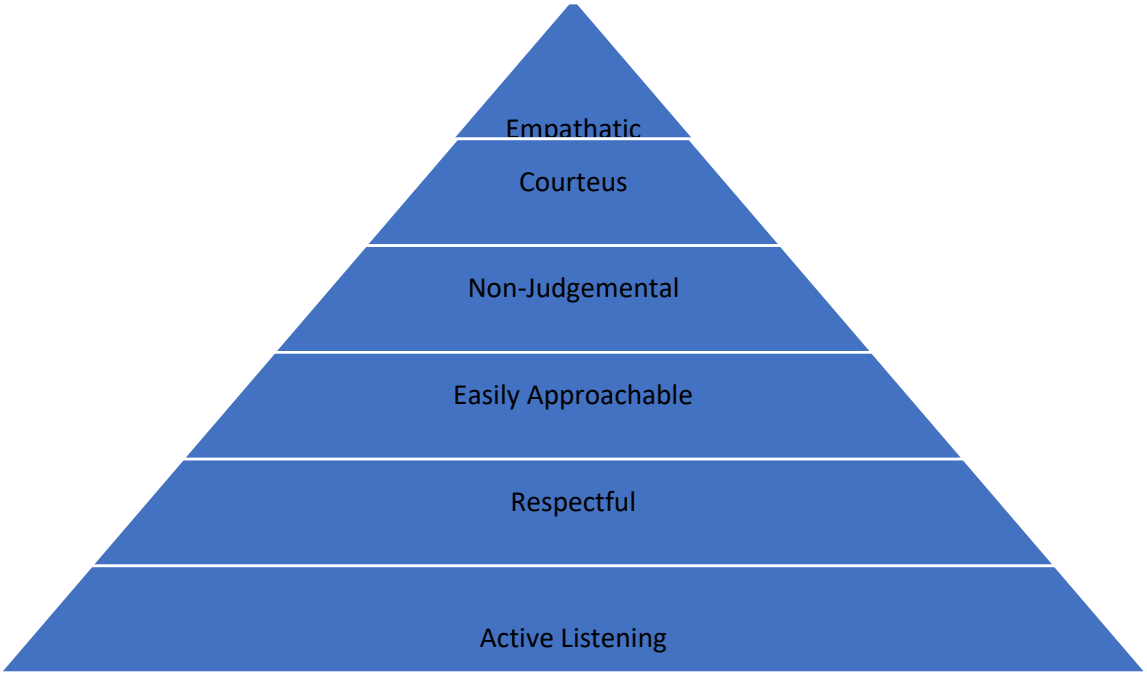

Figure 5: -Qualities to be garnered by ALL Perinatal health care workers

J. Advocacy and Policy Making:

The most important part of improving the perinatal wellness on a large scale will involve promoting policy making into active integration of mental health and maternal and child care services. This must be preceded by screening activities to gather data of felt needs. Forming a good referral system to connect the ones who need help with the available services is of utmost importance. Interacting with relevant stakeholders and dividing said responsibilities will definitely help the service providers realise the needs better. (30) Research funding in order to achieve this aim must come from higher authorities.(46)

C) Menopause and mental health:

Introduction:

Menopause depicts end of the reproductive period in a woman's life. It also indicates that the process of ageing as begun. It is associated with hormonal changes, physical changes psychological changes and social changes. Hence, mental health and well-being of a woman during menopause poses a challenge.

Menopause is defined to have occurred after an amenorrhea of more than 12 months without any physiological or pathological causes. This is natural menopause. The reason for menopause is depletion of ovarian follicles, thus causing a near total absence of ovarian hormone secretion.(47)Menopause usually takes place between 45 to 55 years of age. The average age of Indian women at menopause is 46 years. (48)

The period immediately before and up to 1 year after the Final Menstrual Period is known as perimenopause. It may last for 3–5 years. This phase is characterized by irregular and anovulatory menstrual cycles, decreased fertility and increased follicular stimulating hormone(FSH) level in blood. (47)
Climacteric is a phase indicating the transition from the reproductive phase to the non-reproductive state.
Postmenopausal period is calculated from the last menstrual period.

To understand the stages of menopause a staging system is followed- Stages of Reproductive Ageing Workshop+10. The table 11 shows the stages.(49) and table 12 shows changes in menopause(50)

Table 12: -Stages of Reproductive Ageing

Stage		Menstruation	Levels of FSH
-5	Reproductive stage	Irregular to regular	Normal levels
-4		Regular	
-3			Increased levels
-2	Menopausal transition including period of amenorrhoea upto 12 months	Irregularity of more than 7 days	Increased levels of FSH, Decreased levels of AMH
-1		Irregularity with missed cycles(≥2) or amenorrhoea (≥60 days)	
+1	Postmenopause	No menstruation	Increased levels of FSH, Decreased levels of AMH
+2			

Table 13: -Changes during Menopause

Physical	Vasomotor symptoms	Seen in 19-75%.hot flushes, cold sweats, and night sweats
	Joint pains and Musculoskeletal symptoms	Joint pains are very frequent, Seen in peri and postmenopausal women, Risk more in depressed and obese women. Osteoporosis and osteoarthritis seen commonly. Estrogen deficiency, weight, quadriceps weakness, overloading the knee joints increase risk.
	Weight gain	Increase in body fat
	Skin changes	Decreased cutaneous collgen. Frntal balding, hirsutism, wrinkling
	Loss of balance	Leads frequently to forearm fractures
	Urogenital symptoms	In 15%. Vaginal dryness(32%), pruritus vulvae(10-17%), dyspareunia and urinary urgency(10%)
	Sexual symptoms	Acquired sexual desire disorder
	Ophthalmologic	Dry eyes are common in postmenopausal women. Glaucoma, cataract and blindness can occur as a part of ageing process.

	Anemia	Iron deficiency, Vitamin B12 deficiency and folate deficiency anemia is common
	Cardiovascular	Risk of cardiovascular disorder increases after menopause.
	Metabolic syndrome	Insulin resistance seen in 22.2% at perimenopause and in 32.2%–48% in postmenopausal period
	Diabetes mellitus	Seen in 12% postmenopausal women
	Thyroid disease	3-7% postmenopausal present with hypothyroidism
	Cancer	Risk for breast cancer increases in late menopause. 48% of cases of breast cancer are now seen in women less than 50 years of age. India leads in 25% of disease burden in cancer cervix. Endometrial cancer is a common cancer(4.3 per 100,000) in postmenopausal women. Cancer ovary, vulvar cancer and stomach cancer are also seen.
Neuropsychiatric	Depression	2.5 times more common in postmenopausal women than in premenopausal women. Associated with cognitive impairment like memory disturbances, concentration difficulties
	Cognitive impairment and dementia	Risk factors for dementia- family history, genetic factor apolipoprotein E, mild cognitive impairment, CVD risk factors, physical inactivity, diabetes, hypertension, dyslipidemia, smoking, obesity, autoimmune diseases, depression and stress, social engagement and diet, head trauma and traumatic brain injury, and age
	Sleep disturbances	Very common. Associated psychiatric disorders, psychosocial factors need to be assessed.

Effects of menopause on Quality of Life: -

Menopause is associated with an increased risk of depression. 20-30% menopausal women suffer from new onset depression. In perimenopausal period there is a 2-4 times increase in depressive symptoms and a 2 times increase in the risk of major depressive disorder. Women with depression are more likely to have hot flashes. The risk for depression increases with past history of postpartum or premenstrual mood disorder and psychosocial stress.

As is seen table 12 there are multiple physical and psychosocial changes that affect the transition to menopause. This affects the quality of life of a woman. Many times menopause is viewed as negative experience. However, with appropriate interventions quality of life in menopausal and postmenopausal period can be improved.

Climacteric adjustment is adjustment to end of reproductive phase of life and fertility. If this adjustment happens smoothly, it promotes metal health and well-being of the woman in postmenopausal period. affects the psychological health in a woman. Factors such as emotional reaction to menopause, perceived decline in femininity and beauty, decreased sexual activity, vasomotor symptoms of menopause affect the mental well-being of the middle-aged woman. Anxiety, depression and impairment in social functioning may result because of climacteric maladjustment.(51)

According to a study done by Abdelrehman(2013) psychological well-being is an important factor in the transition to menopause. Psychological well-being is affected mainly by presence of menopausal symptoms. The study stresses the need for assessment of level of stress and psychological well-being of perimenopausal women.(52)
A study done by Seib et al describes a rise in mental health issues in women in midlife which are associated with climacteric symptoms. The study showed an improvement in symptoms once climacteric symptoms decreased. However, on longitudinal follow up, participants who had poorer physical health and functioning had persistent mental health issues. It also acknowledges the role of modifiable lifestyle factors like BMI, alcohol use, smoking, exercise along with psychosocial factors like multiple roles, care giver role for children and elderly, negative life experiences as some of the factors responsible for affecting health related quality of life.(53)

Factors affecting quality of life (54):

1) Physical activity: Decrease in menopausal symptoms like hot flashes, obesity, hypertension, risk cardiovascular disorder.- Through increase in hypothalamic ß endorphins
2) Sociodemographic factors: Absence of socioeconomic problems and better level of education. Better education leads to more awareness and healthy lifestyle practices.
   Married status, good marital relationship and family relations improve quality of life. In urban, nuclear families, the role of the woman has changed. Her career is demanding, she has aspirations to be fulfilled and her social interactions are also varied. This changes the concept of femininity and sexuality. Increasing awareness and preparing for menopause improves quality of life in these women.
3) BMI(Body mass index)- Higher body mass index leads to late menopause due to increased production of estrone in the adipose tissue. Lowering BMI improves physical health, decreases risk of cardiovascular disorder and improves health related quality of life.
4) Smoking and tobacco: Quitting to smoke improves quality of life through a decrease in risk for cardiovascular disease. Smoking reduces estrogen in the body thus causing an early menopause and decreased risk of endometrial cancer.
5) Alcohol : Risk for breast cancer and ovarian cancer increases on chronic alcohol consumption. Cessation of consumption is recommended for that even though consumption of 15-30 gm alcohol/day is known to cause risk for cardiovascular disease.
6) Diet: Phytoestrogens obtained through soya containing foods improve menopausal symptoms and decrease lipids thus improving quality of life.
7) Sexuality : Low estrogen levels are associated with vaginal dryness, dyspareunia, decreased sexual desire and at times Hypoactive Sexual Desire Disorder(HSDD). HRT and treatment of depresson with SSRIs may help.
8) Psychological factors : Hormonal changes(decreased estrogen), menopausal symptoms, sleep disturbances and attitude towards menopause may contribute towards mental health in menopause. Attitude towards menopause may be of three types. It may be considered as a normal transition Menopause may be considered as a negative experience thus may cause more symptoms and depression. On the other hand menopause may be considered as a positive experience thus helping in climacteric adjustment.In a review Brown L. describes two components of mental well being, namely hedonic well being(emotional and cognitive components) and eudiamonic well being(functioning and meaning in life) Studies have indicated that menopausal

symptoms like hot flashes may affect mood negatively(hedonic well being) but eudiamonic state of well being may be unaffected. This may indicate a measure of resilience and may be used to promote a sense of well being during menopause.(55)

Measures for improving mental health and well-being in menopausal women:

Encouraging pro-health behaviors in menopausal women is a strategy in increasing mental health and well-being in menopausal women. A study by ilewska-Kozak et al describes pro health behaviours like Healthy eating habits, Preventing behaviours, Positive mental attitudes, Health Practices. Preventive gynecological examination, self-breast examination and mammography re some of the health practices of postmenopausal women as they consider health as physical health, absence of illnesses, ability to function and need for medications. Increasing awareness about mental health is essential for promotion of mental health in these women.(56)

1. Nutrition in Menopausal Women

- Depending on the lifestyle of the woman, presence or absence of noncommunicable diseases like HT, DM, obesity dietary advise may be given.
- Awareness should be created regarding the phytoestrogens(plant substances functionally similar to 17-estradiol producing estrogenic effects) in soy foods like tofu, soy milk, soy flour, soy meal and lycopene-rich foods in the Indian diet. Soyabean, lentils, beans, chickpeas are rich in isoflavons which reduce vasomotor symptoms(53,54)

- The National Institute of Nutrition plan for an adult sedentary woman is useful in promoting health behaviours in women. The plan includes nutrients like Cereals and millets, Pulses (vegetarian), Nonvegetarian food, vegetables, fruits, Dairy products etc.
- A study by Opie et al(57) recommends dietary modifications in depression.

Table 14: - Dietary recommendations for depression

a. Traditional diets e.g. Norwegian or Japanese diet or Mediterranean diet
b. Consume Fruits, vegetables, legumes, whole grain cereals, nuts, and seeds in more quantity
c. Consume Foods rich in omega-3 polyunsaturated fatty acids
d. Consume wholesome nutritious foods instead of unhealthy foods
e. Say 'no' to processed foods, ''fast'' foods, bakery products and sweets

2. *Physical activity and Exercise in Menopausal Women:*

Exercise and physical activity is recommended for weight management, for improving bone density, for muscle strength and joint mobility, for balance and coordination, for genitourinary problems.(50)In a scoping review of studies on physical activities in perimenopausal women, physical activity was found to have a positive impact on menopausal symptoms, depression, anxiety, self-esteem, life satisfaction, mental well-being. Although the review suggested that the positive impact of physical activity was seen irrespective of menopausal status, it can be one of the measures useful in promoting mental health and well-being in menopausal women. (58)There are a number of studies describing the role of exercises in improving mental health during menopause. In a study by Noh et al using SaBang -Dolgi walking exercise over a period of 12 weeks in menopausal women between 50-65 years, it was found that there was significant improvement in depression, anxiety, phobic anxiety, agoraphobia, stress vulnerability, self-regulation and sleep problems along with an improvement in BMI, waist circumference, grip strength, abdominal muscle strength and flexibility. (59)Exercise also helps in improvement in sleep and depressive features. Studies have shown yoga to be effective in reducing vasomotor symptoms and psychological symptoms like anxiety and depression.

3. *Hormone replacement therapy in Menopausal Women: -*

The types of hormonal replacement therapy are as follows

ET- Estrogen therapy
EPT-estrogenprogesterone therapy
AT-androgen therapy
SERMs-selective estrogen receptor modulators like- raloxifene and bazedoxifene
Gonadomimetics like tibolone(containing estrogen, progestogen, and androgen)

Table 15:- Types of hormonal replacement therapy

Main three indications for menopausal hormone therapy (MHT) are:

1. Menopausal symptom relief

2. Foe urogenital atrophy
3. For osteoporosis
4. premature ovarian insufficiency (POI)
5. early menopause.

Contraindications for MHT:

1.Active breast cancer, high risk for breast cancer,
2.Active endometrial and gynaecological hormone-dependent cancers
3. CVD and at severe increased risk of CVD
4.Severe active liver disease with abnormal liver function, venous thrombosis
5.Undiagnosed and abnormal vaginal bleeding
6.Known or suspected pregnancy

Pharmacological management with Hormone replacement therapy early during menopause can decrease or prevent psychological symptoms. MHT given early during menopause improves vasomotor symptoms, urogenital symptoms, improves sleep and mood. MHT improves memory
Some studies show that menopausal hormone therapy (MHT) significantly improves overall measures of QOL in symptomatic women at menopause. Low-dose MHT has been shown to significantly improves overall measures of QOL. MHT had mixed effects on QOL among older women from the Heart and Estrogen or Progestin Replacement Study trial, whereas the Women's Health Initiative (WHI) Trial Investigators found that estrogen plus progestin did not have a clinically meaningful effect on HRQOL.

4.Resilience building in Menopausal Women:-

Though menopause is associated with many biological, psychological and social changes affecting a woman's quality of life and well-being, it has been observed that many women remain relatively positive about the experience of menopause. Hannah Suss conducted a study in healthy women in perimenopausal period and established that there is an association between resilience and life satisfaction, good general psychological

Health, few depressive symptoms, low perceived stress, low psychological distress and fewer menopausal symptoms. It described various factors like optimism, emotional regulation and stability, self- esteem and compassion related to resilience and points towards the need to develop resilience building programmes for enhancing mental health and well being in menopausal women.(60)
Studies have shown that good self-esteem, positive attitude to menopause, self-compassion, a feeling of mastery, work satisfaction, success in various domains in life etc help in improving mental health and giving rise to a feeling of well-being in perimenopausal period. Making use of positive emotional experiences helps in building resilience during this period.

5.Social support in Menopausal Women-

Social networking and interactions: Sometimes beliefs related to sexuality, beauty cause impairment in social interactions. Inability to accept menopause as a stage of life also affects

social relationships. Good marital relationship improves mental health during menopause. Similarly social networking helps in dealing with changes during menopause.

6.Education in Menopausal Women: -

Regarding physical and psychological changes and symptoms, addressing questions, Joint decision-making regarding drug treatment with a discussion on risks and benefits, side effects, duration of treatment.(50)

Using technology for dissemination of information to women through online consultations, therapeutic interventions, providing online communities for support can be helpful.(61)

7.Public health approach towards Menopause: -

WHO has described ways of improving mental health in menopausal women. (62)

- Creating awareness about the impact of menopause on individual and societal levels and on the socioeconomic development of a country.
- Advocacy to include a timely diagnosis of menopausal symptoms along with effective management of the same as part of universal health coverage;
- Inclusion of training for health care workers and community health workers about menopause and treatment options.
- Dissemination of information about healthy ageing, high quality of life before and after menopause through life course approach to health and well-being and including sexual health and well-being.

Assessment of mental health and well-being:

Table 16:- Assessment for mental health and well-being across Menarche, perinatal and menopause

Menarche	Perinatal	Menopause
Detailed history Sociodemographic status Socioeconomic status Awareness and understanding of pubertal changes Detailed sexual history	Detailed history-sociodemographic-education, marital status, socioeconomic status	Detailed history-sociodemographic-education, marital status, socioeconomic status
Clinical examination Physical Signs of puberty	Clinical examination: - Signs of Depression, Anxiety,	Clinical examination-symptoms of menopause, examination for non-communicable diseases

General examination- BMI, waist circumference, breast examination, pelvis examination		Menopause related symptoms- Menopause rating scale
Laboratory test- complete blood count, urine test routine, fasting glucose level/Hb1Ac, lipid profile, serum TSH,		Breast examination and assessing risk of invasive breast cancer by Gail model
		Assessment of cardiovascular disease- using WHO SEAR, WHO/ISH Risk Prediction Charts for India
		Osteoporosis- by OSTA/SCORE/FRAX
		Mental health- SARC-F, a 5-item scale
		General examination- BMI, waist circumference, breast examination, pelvis examination
		Laboratory tests- complete blood count, urine test routine, fasting glucose level/Hb1Ac, lipid profile, serum TSH, stool for occult blood, PAP smear, vaginal pH, TVS, mammogram, or US

Scales and Instruments for mental health assessment:

Table 16: - Scales and instruments for mental health assessment across Menarche, perinatal and menopause

Menarche	Perinatal	Menopause
A self-administered rating scale for	The Patient Health Questionnaire - 9 (79)	General Health Questionnaire(64)

pubertal development (63)		
Childrens Depression Scale(65)	Edinburgh Postnatal Depression Scale (80)	Psychological well-being inventory(66)
SCL-90(67)	Whooley questions (80)	Short Form Health Survey (SF 36)(68)
Menstrual health questionnaire(69)	Perinatal Anxiety Screening Scale (PASS) (81)	Diener's Satisfaction with life scale(70)
Menstrual practice questionnaire(71)	Perceived Prenatal Maternal Stress Scale (82)	Life satisfaction index(72)
Menstrual attitude questionnaire(73)	Pittsburgh Sleep Quality Index (83)	Warrick Edinburgh mental well-being scale(74)
	GAD - 7 (84)	Health Behavior Inventory(75)
		CIDI-VENUS(CIDI-V)(76)
		Climacteric adjustment scale(77)
		Green's climacteric scale(78)

Recommendations: -

Table 17:- Recommendations across Menarche, perinatal and menopause

Nutrition	
Menarche	Maintain a BMI within the normal range. Avoid excessive consumption of processed and fatty foods. Adopt a balanced diet rich in both macro and micronutrients
Perinatal	Mainataining a balanced diet with required supplements as suggested and tailored by the maternal and child health services.
Menopause	Healthy food options, phytoestrogens containing soy foods like tofu, soy milk, soy flour, soy meal and

	lycopene-rich foods in the Indian diet. Soyabean, lentils, beans, chickpeas are rich in isoflavons.
Sleep	
Menarche	Around 8-10 hours
Perinatal	Sleep Hygiene, Minimum 8 - 10 hours of peaceful sleep
Menopause	Sleep hygiene, MHT for vasomotor symptoms and sleep improvement, treatment of depression
Physical Activity	
Menarche	Moderate physical exercise
Perinatal	Walking, Jogging, Yoga, Pilates, Swimming, Light Cycling
Menopause	Walking, aerobics, yoga, pelvic floor exercises
Resilience	
Menarche	Educate young girls about the unrealistic standards often portrayed in media. Expose girls to diverse role models who embrace their bodies and demonstrate self-confidence Compliment girls on their talents, skills rather than appearance Teach strategies to manage intense emotions Teach Problem solving techniques
Perinatal	Improving Education, Making Women Financially independent, Increasing Job Opportunities, Share positive child birth experiences, Improve availability and access to quality Maternal and Child Care services.
Menopause	Improve self-esteem, develop positive attitude to menopause, show self-compassion
Family environment	
Menarche	Address mental health of parents Minimize interpersonal conflicts
Perinatal	Developing a supportive environment with focussing on partner, home, workplace & health care professionals. Improving access to mental health services

Menopause	Improve social networking
Education	
Menarche	Start sex education by the age of 9 for women Educate Men regarding changes in the female body during puberty Take training for teachers of how to Educate children Training should be in small groups with active student engagement
Perinatal	Active efforts to ensure destigmatizaton by putting in psychoeducating about perinatal mental health focussing on the women in perinatal period, their families, Maternal and child health care professionals, Community health care workers.
Menopause	Regarding physical and physiological changes that are expected Regarding benefits and risk of treatment and make them a part of decision making

Conclusion:

Reproductive health encompasses mental health and well being as an integrated component. Beginning from menarche to menopause adapting various health behaviours and positive mental attitudes, building resilience helps in successfully sailing through these stages. Mental health in a woman improves her own quality of life, enhances life satisfaction and thus improves the health of the family.

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Mental Health and Wellbeing at Workplace

Type of article: Clinical Practice Guidelines

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Mental Health and Wellbeing at Workplace

Introduction:

World Health Organisation conceptualised Mental Well-being as a state where individual is able to understand his abilities, cope with normal life stressors, work productively, understand his abilities and contribute productively to the community (1). Mental Health and Well-being is a broad concept with primary focus on the health of the workforce (2). Certain workplace factors like shift work, work demands, work stress, etc., can put an employee at higher risk of mental problems (3). Poor mental health and lower well-being of the workers can lead to lower employee satisfaction, lower work performance, burnout, increased risk of occupational hazards. Since the workers are also part of the community, the effects of the poor mental health can also affect the family and the society. Higher mental health and well-being can lead to greater work productivity, more prosocial behaviours, increased creativity, increased longevity, improved physical health and more positive interpersonal relationships (4).

According to World Health Organisation, around 60% of the total world population is in work, of which 61% work in informal jobs. It is estimated that 12 billion working days are lost every year due to depression and anxiety and 50% of total societal cost of mental health conditions is caused due to indirect costs including reduced productivity (5). According to the Periodic Labour Force Survey Report – Annual Report (July 2021-June 2022), published in Feb 2023, the Worker Population Ratio (WPR) in India is around 73.8 for males and 31.7 for females. The WPR is higher among rural population, both for males and females, compared to urban population (6).

Workplace characteristics may be different in India as compared to some of the developed Western countries. The proportion of the workers in the informal sector is quite high in India, which has a consequence on the security in the job, insurance and other benefits, and potential to have disability and pension benefits. The workplace characteristics also needs to consider a large agrarian economy alongside booming service economy and a gradually expanding industry, though all of these are on the lower side of value addition chain by global comparisons. Thus, the economic aspects of the workplace needs due considerations for drawing inference on the literature and recommendations about workplace wellbeing. Added to it are the cultural tenets of collectivism, yet subtly creeping individualism at the social level. The young demography of the country with the dynamics of competition and espoused values of being ‘settled’ as drivers of employment market also has connotations for the Indian workplace wellbeing. Varied geographies, workplace patterns, literacy, avenues of social and economic mobility, proclivities of migration (internal and external) are other factors which make unitary recommendations for wellbeing challenging in the Indian workplace. Hence, the present Clinical Practice Guidelines takes a pragmatic approach and suggests careful considerations of the mentioned factors prior to application.

Mental Health and Well-being at Workplace

There is abundant literature on mental health and wellbeing at workplace. We present some Indian studies on the epidemiology of wellbeing at workplace. A study conducted by Manah Wellness among 1764 employees who were employed in white-collar jobs, residing in urban India in 2022, using Emotional Check-in Tool, found that nearly 29% of the respondents showed moderate to severe signs of depression, 55% had moderate to severe signs of anxiety, 78% had moderate to high amount of stress. However, in spite of this, around 99% reported moderate to high psychological well-being (7).

A review of various studies that assessed the prevalence of non-communicable diseases and mental illness in Indian Workplace found that a range of 10% to 52.9% of workers suffering from depression and a range of 7% to 57% workers suffered from anxiety, while 3.8% to 75.5% of workers suffered from workplace stress (8).

Another study conducted by Deloitte on Mental Health and Well-being at Workplace among 3995 respondents across 12 industries found that more than 80 percent of respondents reported being affected by at least one adverse mental health symptoms – with depression being the most commonly cited symptom (59%), followed by emotional exhaustion or burnout (55%), irritability or anger (51%), Sleep issues (50%) and anxiety (49%). The same survey also tried to find out the sources of stress among these respondents and they found that workplace related stressor was the most common (47%) followed by financial stress (46%), COVID-19 related factors (42%), family relationships (39%) and social connections (37%) (9).

Another survey conducted by White Swan Foundation for Mental Health among 800 workers found that despite more than half (56.0%) reported having mental health issue and nearly two-thirds (64.3%) reporting knowing someone at workplace having a mental health issues, only 24.6% felt that their workplace was extremely supportive for people with mental health issues and only one in four people received mental health support at the workplace. Also, only one in ten persons had access to Employee Assistance Program services (10).

Poor mental health and well-being is one of the major reasons for employees poor performance at workplace dropping out of work. World Health Organisation have identified 10 risk factors for poor mental health at workplace (11):

a) Work content / Task design
b) Work Load and Work Pace
c) Work Schedule
d) Control
e) Environment and Equipment
f) Organizational culture and function
g) Interpersonal relationships at work
h) Role in organisation
i) Career Development
j) Home-Work Interface

A meta-analysis of 7 longitudinal studies with 28431 participants found that shift work was associated with increased risk for adverse mental health outcomes (effect size = 1.28, 95%CI: 1.02, 1.74), especially for depressive symptoms (effect size = 1.33, 95% CI: 1.02, 1.74). Gender was found to have a significant role in this with female shift workers more likely to experience depressive symptoms than female non-shift workers and male counterparts (12).

A systematic review of 9 studies that tried to assess the effect of employment conditions and psychosocial workplace exposures on the mental health of young workers found that exposure to contemporaneous sexual harassment was associated with incidence of depressive symptoms. Also, poor psychosocial job quality (low job control, high job demands and complexity, job insecurity and unfair pay) were associated with depressive symptoms (13).

A cross-sectional study among 834 participants across 35 countries found that among patients with a diagnosis of depression in the past 12 months, 62.5% had anticipated and / or experienced discrimination in work setting. Around 60% of the participants from high income countries had stopped applying for job or training due to fear of discrimination(14).

Apart from these, other factors that have been found to affect the workers' mental health and well-being are past mental illness and family history of mental illness. A study found that perceived mental illness related stigma among 228 non-professional occupational mental health staff was significantly related to depersonalisation domain of burnout (15).

Assessment:

WHO does not recommend routine screening for mental illness in the workplace due to lack of evidence for its benefits or harms.

Yet, assessment of wellbeing at the workplace has advantages for understand the status of wellbeing in a particular workplace location. There are several instruments to assess mental health well-being at the workplace. The utility of these instruments lies in their ability to detect those at risk of mental health issues, so that they can be identified and helped in a reasonable manner. There are other instruments that aim to assess the positive aspects of work and functioning, in order to enhance the work related factors that promote subjective wellbeing. Nebbs et al have reviewed 109 English language instruments that could be potentially used for workplace mental health, and the reader is referred for a comprehensive update. Some of the instruments with their characteristics are presented in table 1.

Table 1: Instruments with potential utility for workplace mental health

Instrument name	Authors/ Organization	Characteristics
A Shortened Stress Evaluation Tool (ASSET)	Johnson, 2009	Screens employee stress. 37 item questionnaire

Brief Job Stress Questionnaire (BJSQ)	Inoue et al., 2014	Measures psychosocial factors at work. 141 item standard version, and 80 item brief version
Mental Health Audit	People Diagnostix.	Audits organization's resources and supports for promoting employee mental health. 14 item tool.
ILO Stress Checkpoints	International Labor Organization, 2012	Reviews workplace conditions that may lead to employee stress. A 50 item checklist.
iWorkHealth	Abdin et al., 2019	Identifies common workplace stressors. It is a 27 item tool.
Measure of Psychosocial Risk Factors and Burnout	Jacobo-Galicia and Maynez-Guaderrama, 2020	Evaluates burnout and psychosocial risk factors in workplace. It is an 80 item instrument.
Perceived Work Characteristics Survey	Haynes et al., 1999	Assesses psychological well-being of employees. it is a 41 item survey.
New Organizational Role Stress Scale (NORS)	Srivastav, 2009	Assesses role stress at work. 71 item scale. Developed in India
Employee Well-Being Scale	Pradhan et al., 2019	31 item scale. Assesses employee wellbeing at work. Developed in India
Occupational Mental Health Screening Tool and (Burnout screening tool and Workplace Assessment Screening tool)	Balachander et al, 2023	Burnout screening tool looks at Emotional Exhaustion, Depersonalization and personal accomplishment. Has 19 items. Workplace assessment screening tool has 10 items and assesses salient aspects of workplace

The application of the instruments would depend upon their perceived utility. The screening instruments for workplace environment can guide about whether the

workplace is attuned to the needs of the employees. It can also be used to track employee wellbeing over time, and find out the responses to specific interventions. Considerations need to be given about when to apply such scales and instruments (routine periodic assessments or triggered by certain events or interventions), who should be the employees targeted for these (all employees or selected ones), who should have access to the data from the assessment (the management or external agency - people are less likely to give the exact picture if they are under the coercion of the employer), and what is done with the data from the evaluation (is the data consigned to archives or some actions are taken based upon the findings).

Interventions – Evidence in Literature:

- There have been many reviews, systematic reviews, meta-analysis that have focused on the various aspects of workplace interventions. Most of the studies have taken multimodal interventions and hence it is difficult to tease out what is the most effective component among them.
- A review of 14 systematic reviews that focused on mental health interventions in the workplace on work outcomes found that the workplace interventions that had components to improve both mental and physical health together and multicomponent mental health interventions have the greatest impact. Also interventions that contained exposure in-vivo approaches for particularly effective for anxiety disorders (19).
- A review of 55 studies that focused on organisational interventions promoting mental health and happiness among healthcare workers found that most studies have come from high-income countries and most studies targeted nurses. The review also found that the most common construct assessed was burnout, stress and work satisfaction and the type of interventions most commonly used were development of skills and knowledge, communication and team building, management of workload and time, stress management and leadership development (20).
- A review of 80 reviews that focused on mental well-being interventions found that highest quality evidence was found for mindfulness based therapies, education and information provision and individual psychological therapies , with the most common positive effect reported for burnout / stress reduction and mental well-being(2).
- A rapid systematic scoping review of 30 articles that focused on mental health interventions at workplace in India found that there were four types of mental health interventions in India –
  (a) Corporate Wellness Program (Which focuses on work-life balance strategies, wellness sessions like yoga, meditation, etc)
  (b) Employee Assistance Program (Mainly focuses on providing counselling services)
  (c) Employee Wellbeing Program (Provides Health services – both physical and mental health)
  (d) Peer Support Program (Providing peer support).

The review found majority of the available studies belonged to the first two categories. Many studies have explored the preventive and promotive physical and mental health services. Some studies trained their employees on psychological first aid and established peer-support networks. Some studies focused on digital interventions provided by companies for their employee's mental health including Artificial intelligence based chatbot. However, the impact of these interventions and whether these interventions are actually effective have not been explored in this article (21).

- A Review of 66 meta-analyses that focused on universal, selective and indicated interventions for supporting mental health at workplace found that most meta-analyses on workplace interventions have either focused on a specific population, specific intervention, specific delivery format or specific outcome. The review found that psychosocial interventions were the most common type of interventions in all the three intervention groups. Physical activity or lifestyle interventions were included in the programs that targeted either for all general workers or healthcare workers, but not for workers with mental illness symptoms (22). The review found the following with respect to universal interventions:
  a) Psychosocial interventions, physical activity and lifestyle interventions together were associated with moderate effect on positive mental well-being (SMD = 0.51; 95%CI: 0.31, 0.71) and large effect on quality of life (SMD = 0.77, 95% CI: 0.28, 1.26).
  b) Meta-analysis that focused only on physical activity and lifestyle programmes showed a negligible, but significant effect of the interventions on work ability (SMD = 0.12, 95%CI: 0.01 to 0.22).
  c) Psychosocial interventions alone resulted in small effects on burnout (SMD = 0.17, 95% CI: 0.03 to 0.32) and insomnia (SMD = -2.21 in insomnia severity index, 95% CI: 1.06 to 3.36). Mindfulness and contemplative interventions had a moderate effect on general distress (SMD = 0.49, 95% CI – 0.32 to 0.66) and large effect on subjective well-being (SMD = 0.86, 95% CI: 0.19 to 1.53). CBT based interventions had smaller effect on subjective well-being (SMD = 0.22, 95% CI: 0.04 to 0.40). Psychosocial interventions delivered through e-health formats showed small effect on symptoms of common mental disorders (SMD = 0.25, 95% CI = 0.11 to 0.40), depression (SMD =0.20, 95% CI: 0.03 to 0.35), burnout (SMD = 0.26, 95% CI: 0.02 to 0.5) and stress (SMD = 0.27, 95% CI: 0.15 to 0.39), work effectiveness (SMD = 0.18, 95% CI = 0.06 to 0.3) and small to medium effect on well-being (SMD = 0.35, 95% CI: 0.25 to 0.46).
- All the included studies that focused on selective interventions were on healthcare workers. When psychosocial, physical and lifestyle interventions all were pooled together, there was small effect on anxiety symptoms (SMD: 0.20p = 0.03), moderate effect on stress (SMD = 0.060, p< 0.001), moderate effect on resilience (SMD = 0.58, p =0.001) and large effect on mindfulness (SMD = 0.85, p <0.001). Psychosocial interventions alone showed small effect on depression symptoms (SMD = 0.29, 95% CI: 0.09 to 0.50) and moderate effect on stress (SMD = 0.61, 95% CI: 0.15 to 1.07). These

interventions also led to an absolute reduction on 2.06% on burnout symptoms. Psychosocial interventions led to small-to-moderate effect on optimism (SMD = 0.41, 95% CI: 0.1, 0.72), self-efficacy (SMD = 0.43, 95%CI: 0.25, 0.62) and resilience (SMD = 0.45,95%CI: 0.25, 0.65) and large effect on positive emotions (SMD = 0.85, 95% CI: 0.17, 1.53). Mindfulness based interventions were found to have small effect on general distress (SMD = 0.21, 95% CI: 0.04, 0.38) and burnout (SMD: 0.26, 95%CI: 0.03, 0.50), moderate effect on depression (SMD: 0.51, 95%CI: 0.23, 0.78), stress (SMD: 0.55, 95% CI: 0.14, 0.95), large effect on anxiety (SMD = 0.78, 95% CI: 0.18, 1.39). moderate effect on self-compassion (SMD0.58, 95%CI: 0.19, 0.97). Web-based CBT intervention targeting suicide related outcomes among physicians found it to be effective with 60% of those who followed the programme being less likely to report suicidal ideation than control group.

- The review found the following with respect to indicated interventions. Psychosocial interventions showed small to moderate effects on depressive symptoms in patient with elevated depressive symptoms (SMD = 0.40, 95% CI: 0.25, 0.54). CBT-based interventions were found to have small to moderate effects on depressive symptoms (SMD = 0.44, 95% CI = 0.26 to 0.61). No psychosocial intervention was found to be effective for burnout symptoms. E-health interventions were found to have small to moderate effect on depression (SMD: 0.40, 95% CI: 0.21, 0.53), anxiety (SMD=0.42, 95% CI: 0.23, 0.61) and overall symptoms of common mental disorders (SMD =0.52, 95% CI= 0.28, 0.75), moderate effect on burnout (SMD = 0.60, 95%CI = 0.30, 0.88) and large effects on stress (SMD: 0.84, 95% CI: 0.55,1.3) and insomnia (SMD: 0.80, 95%CI: 0.22, 1.39) and small effect on improving work effectiveness (SMD= 0.32, 95% CI: 0.04, 0.61). Stress management programmes showed moderate effect on symptoms of common mental disorders (SMD = 0.64, 95% CI=0.43, 0.85) (22)

- A systematic meta-review of 20 reviews which included 481 studies, had divided the interventions as primary, secondary and tertiary (23) (Shown in table 2).

Table 2: Interventions pertaining to workplace (ref no 23)

Primary interventions	Secondary prevention interventions	Tertiary prevention interventions
Employee control - self-scheduling of shifts and process of gradual or partial retirement was associated with significant improvement in mental health. Flexitime, Overtime, and Fixed time contracts did not have much effect.	Screening: Screening for depressive symptoms followed by support and care may reduce depressive symptoms, higher job retention and more hours of work. However, concerns are also raised about the risk of false positive results in	CBT: CBT can lead to significant improvement in anxiety or depression symptoms, but its effect on occupational outcomes was not clear. Therapies that are part of a formal 'Return to Work' Programme or development of problem

Physical activity: The meta-review found that physical activity was found to be associated with reduction in depressive and anxiety symptoms. Workplace health promotion: No conclusive evidence for its positive effect on mental health	the screening tests, which can increase the risk of distress, increase stigma and can make individuals to remain focused on their symptoms. Counselling – Counselling has been found to have mixed results. Stress management programmes: CBT based stress management programmes had effective in reducing mental illness symptoms De-briefing: Studies have found that debriefing interventions following traumatic incident at workplace was not effective	solving skills which are directly related to the workplace have been found to be effective. Exposure therapy: Exposure in vivo therapy has been found to be effective in reducing PTSD symptoms and increasing the chance of return to work. Medications: While medications are well-known to reduce symptoms of depression and anxiety, its effect on workplace absenteeism was not clear

- A systematic review and meta-analysis of 21 RCTs that tried to assess the effectiveness of occupational digital mental health interventions found that these interventions had a significant effect on psychological well-being (g =0.37, 95%CI: 0.23, 0.50) and work effectiveness (g = 0.25, 95% CI: 0.09, 0.41). No specific psychological intervention were found to be superior to others. There was no significant difference between self-guidance and offering guidance as well as between universal intervention vs targeted intervention. Intervention characteristics that can increase engagement include offer of guidance over a shorter time frame of 6 to 7 weeks, use of secondary modalities for delivering interventions and engaging users (Ex: Emails, Text messages), use of self-monitoring and tailoring (24).
- A systematic review of studies that focused on the effect of yoga at workplace on health outcomes found that the overall effect of yoga on mental health was beneficial, especially on stress (25).

Thus, substantial literature has accrued on the interventions to promote wellbeing in the workplace. However, much of the literature has come from the Western countries. There is evidence from India as well (21).

How to implement a successful mental health intervention at workplace and Recommendations

A review of 20 International Guidelines on Workplace mental health reported that Canadian Standard had the (2013) scored highest for both the quality and comprehensiveness of the content, followed by Australian Heads-Up Material, the

British health and Safety Management Standard and EU-PRIMA-EF guidelines (16). Based on these, the following are the steps of workplace based interventions.

1. **Community Participation:** Studies have found that participation of the stakeholders in development and implementation of the intervention is necessary for the intervention's successful implementation (26,27). Also, this participation itself can lead to a positive effect on the employees' mental health and work (28).

2. Intervention based on Needs
Interventions based on Perceived needs of the workers - Interventions that are based on the actual needs at the workplace has been found to have a positive impact. This includes identifying the workplace factors that needs to be targeted in the interventions, doing a pilot study or using theoretical construct to develop interventions focusing on the local needs and improving and expanding the interventions based on the pilot study (26).
Interventions based on the symptoms of mental illness

- **Universal, Selective, Indicated interventions**
- Crisis Interventions
- Medical Leave and Allowing to re-join work
- Rehabilitation

3. Advocating for Realistic expectations - Interventions that create high expectations among workers can lead to negative effects or short-term positive effects, as there will be a mismatch between the high expectation of the participants and what the intervention can deliver. Hence, there is a need to define what can be expected and what not, to make the expectations realistic for the workers (29).
4. Multi-component interventions - Interventions that focus on both physical and mental health or have multi-component mental health interventions have been found to have greater effect in improving the workplace outcomes (19). Interventions should include psychosocial interventions, physical health and lifestyle interventions.
5. Inclusive Interventions
Interventions should be as inclusive as possible, with no stigma or discrimination related to gender or minority status should be there.
6. Interventions at multiple levels – Policy level, Organisational, Employer, Employee levels. These are discussed further as below.

Employee-level interventions - These aim to build resilience, augment stress management skills, mitigate emotional distress, promote positive mental health among workers, and improve their work efficiency. Employees may be offered access to interventions based on mindfulness, cognitive-behavior approaches, yoga, and resistance training. Box 1 provides employee-level suggestions to improve workplace mental health.

Box 1 – Suggestions for employee-level interventions to improve workplace mental health

- Physical activity such as exercise, aerobic training, strength training, must be encouraged to improve mental health and productivity.
- Organizations must create an atmosphere where employees do not feel intimidated or stigmatized to discuss their mental health issues openly, either with their manager or a designated person (counsellor, or mental health champion
- The above are universal level interventions that can be offered to all

Manager-level interventions

These interventions aim to empower training managers to identify and respond to mental health issues among team members, to provide them the necessary support, and modify relevant stressors in the working environment to pre-empt mental health issues among workers. These interventions do not aim to empower the managers to diagnose and treat team members with mental health issues. In this context, managers refer to those who are in a direct supervisory capacity, or involved in supervising/managing team members, or holding key administrative positions where they exert managerial control over workers. Box 1 provides employee-level suggestions to improve workplace mental health. Box 2 provides manager-level suggestions to improve workplace mental health.

Box 2 – Suggestions for employee-level interventions to improve workplace mental health

- Managers must be systematically and periodically trained in recognizing and responding to mental health issues among team members. Training must also be imparted in communication skills including listening, empathizing, and communication about mental health issues.
- Specific training for managers must focus on raising awareness in mental health issues, stress-reduction measures at the workplace, measures to improve employee participation in decision making, promotion of employee mental health and wellbeing, and creating a culture of open communication between managers and team members.
- Training may include early warning signs of mental distress, starting a conversation on mental health with a distressed team member, regular check-ins with those at-risk, when to refer, and knowledge of professional resources or local support groups for an appropriate referral
- Encourage managers to make work environment flexible, wherever possible by permitting flexible working hours or hybrid work patterns, particularly for those at-risk of poor mental health outcomes.
- Encourage ‘buddy system’ where two managers working in related areas are paired and look out for each other’s well being and also provide necessary peer support when needed
- Given their exacting nature of work, managers themselves need to be encouraged to monitor and address their mental health needs. Sufficient time needs to be provided in their schedule for this requirement.
- Continuous and ongoing feedback must be obtained from the managers about workplace environment and interventions to promote mental

Organization level interventions

These interventions aim at resolving psychosocial risk factors and designing interventions that are participatory in nature for optimal uptake and impact in terms of mental health outcomes as well as work productivity. In doing so, as part of planning for organizational interventions, there must be a regular and ongoing assessment and monitoring of workplace-related factors that may impact mental health and wellbeing of workers. Such occupational health hazards assessment and monitoring protocols must include changes to the work profile or organizational structure of the workplace as a trigger for reassessment. Particular attention needs to be paid to fidelity of interventions: whether they are delivered in a manner in which they were conceptualized. Ensuring fidelity of interventions would enhance

- As part of planning for organizational interventions, every organization must conduct assessment of mental health and wellbeing of its employees and wellbeing needs. This would include assessment of key mental health indicators, gauging the extent of employee participation in decision making, and noting employee preferences for strategies aimed at enhancing mental health and wellbeing.
- Result of this wellbeing and needs assessment phase should inform the strategy to enhance mental health and wellbeing. This strategy should have the following components: phases with timelines, objectives, strategy to deliver each objective, outcomes with appropriate measurement methods, monitoring, and evaluation.
- The above program must be adequately resourced and supported by the concerned organization. This involves providing adequate funding, support personnel, time and training for employees during working hours to raise awareness about mental health issues. If the organization lacks the experience or resources to formulate and implement the strategy, then the services of professional agencies or mentors must be engaged.
- Organizations must create a small coordination committee comprising an appropriate representation of stakeholders. They will be responsible for developing, implementing, and evaluating mental health and wellbeing strategy and action plan.
- An evaluation plan with clear goals, objectives and outcomes must be formulated beforehand to assess the impact of the wellbeing strategy, identify gaps in implementation, formulate monitoring strategies, and refine the strategy to achieve intended outcomes.
- Regular surveys of occupational health among staff, providing free and unhindered access to employee wellbeing resources, and making contingency plans for dealing with unexpected traumatic events among employees, such as pandemic or fire hazard, would help mitigate the impact of such events and help identify those at-risk.
- To reduce workplace-related stressors, organizations may allow some degree of self-management of workloads, encourage reasonable and

outcomes. Box 3 provides organization-level suggestions to improve workplace mental health.

Box 3 – Suggestions for organization-level interventions to improve workplace mental health

Policy level interventions

Globally, the cost of workdays lost due to poor mental health issues runs into billions of dollars. International conventions mandate that local and regional authorities create a safe and healthy workplace environment where workers are not discriminated against and are provided equal opportunities for vocational rehabilitation. Box 4 provides policy-level suggestions to improve workplace mental health.

Box 4 – Suggestions for policy-level interventions to improve workplace mental health

- Policy makers should take a leadership role in championing the cause of workplace mental health and value promoting mental health at the workplace.
- They should focus on capacity building measures to identify and respond to mental health issues at the workplace and provide uniform guidelines and set standards for interventions aimed at improving employee mental health.
- They should support lower-resourced employers and organizations in evolving mental health and wellbeing strategies, allocate resources appropriately, and encourage sharing of resources between organizations.
- Focus on awareness building strategies among the employers, employees, and general public regarding the importance of workplace mental health by harnessing the power of mass media and social media
- Engage with organizations, social arm of companies, charitable organizations, employee representative unions, and other relevant enterprises to advocate for mental health and wellbeing and develop, review, or revise occupational health and safety laws
- Support organizations in implementing and evaluating workplace mental health and wellbeing policies by playing an advisory role, and by recognizing, rewarding, and accrediting organizations that perform well on these parameters.
- Support organizations in identifying and addressing local barriers to mental health and wellbeing at the workplace. This can be done, for

Conclusion:

Consideration for mental wellbeing at the workplace is the need of the hour, and specific approaches are required based upon local realities. Various approaches at the employee level, organizational level and policy level can be leveraged to improve the wellbeing. One has to be cognizant of the different types of workplaces, the resources that could be made available for workplace wellbeing, and the overall

workplace culture in the broader socio-economic situation and societal outlook prior to considering implementation of workplace wellbeing measures.

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CREATIVE PURSUITS FOR MENTAL HEALTH AND WELL BEING

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CREATIVE PURSUITS FOR MENTAL HEALTH AND WELL BEING

Summary:

This clinical practice guide traces the role of art and creativity for mental health and wellbeing. This is a difficult task since the evidence from research spans a wide variety of fine art forms and different aspects of creativity. Hence we have tried to combine both evidence based research as well as our clinical experience and practice in the field of arts in utilizing creative pursuits as a life-skill and a wellbeing initiative. The focus of the guidelines is preventive and promotional with relevance to mental health. We also hope that this should be a beginning in encouraging Psychiatrists in India to use art based therapies in their clinical practice . This will further our knowledge on how arts can be therapeutic intervention as well as a wellbeing tool. It will also build on the evidence base on how art impacts our mental health. Creativity is undeniably one of humanity's most valued traits; the capacity to produce new ideas, innovations, and art is perhaps the most striking characteristic of the human brain. "Art" has evolved and what is art, has been redefined over human history. The domain of "art" refers to the diverse range of activities which often use imagination to express ideas and feelings. Whilst the boundaries of what constitutes art or creativity may sometimes appear esoteric, we still can identify a range of creative pursuits: visual, musical, verbal, literary, dance or creative pursuits related to our body movements and a range of forms of newer integrated forms and those use technology are recognised as art forms. As in most ancient traditions, in India, we have a plethora of fine art traditions many of which have a highly systematic practice around their learning. We believe this is an asset, which we need to nurture and celebrate. We begin with tracing the footsteps of Indian fine arts being a mental health promotional tool in ancient India .We then proceed to describe on the scope of creative pursuits for different populations,its relevance in school and child mental helath. We offer suggestions as to how creative art forms can be utilized in a practical way in daily life,schools,and care of the elderly. It is to be noted that the entire focusa here is the process of creativity and not the completed product or the achievement related to the same.Hence it is relevant to each one of us and for anyone who wishes to be healthy.

Introduction

Creativity is the ability to discover innovative and original ideas. It is one of the ten life skills advocated by World Health Organization.[1] It is a part of our drive as humans—fostering resilience, sparking joy, and providing new insights for a feeling of self-actualization and thus a sense of wellbeing.

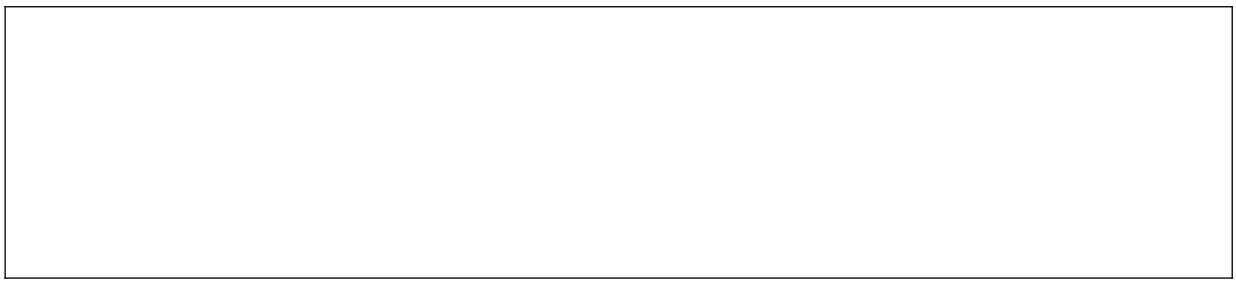
Fine art forms are the expressions of creativity in humans. But an idea need not be artistic or world-changing to count as creative. Life requires daily acts of novelty ; in this sense, every one of us possesses some amount of creativity. We realize that the fine arts and craftsmanship activities like drawing, drumming, singing , innovative movements-dance and drama permit the people of all age groups, from different cultural backgrounds, to communicate their musings , sentiments and feelings in a way different from the typical methods of verbal expressions. Hence creative pursuits in any form how much ever trivial have unique utility as mental health promoting and protecting activities.

What is Creativity?

Creativity is difficult to define due to its complex neuro-psycho-philosophical construct and probably that's the reason we find many definitions on literature search. In divine sense it's about creating out of nothing but scientifically speaking it's about creating something tangible or intangible by somebody with the help of something. Creativity is reflected not only in its products but also the process and the person who never remains same after the visible or invisible grind. The outcomes of creativity include from inner transformation to problem solving and creation of insight and knowledge to innovative and aesthetic artifacts.

TABLE 1

Definitions of creativity
1.*Product oriented*- novelty or originality and task appropriateness, or meaningfulness. Excludes person and process perspectives
2.*Person oriented* - focus on what's happening in the mind; divergent and convergent thinking is also about process.
3.*Process oriented* –focuses entirely on process ,whatever may be the product may be.



Creativity leads to creation of something in the outside world, but simultaneously it also has consequences every time on the inner self, leading to strengthening of self and inner resilience, validation and enhancement of esteem, relief from pain and distress and restoration of order. The creative person, according to a humanistic perspective, has the consciousness and the abilities to address crisis in transformative ways. Therefore, the creative person can be understood as being in a process to reach self-actualization and to develop characteristics that are related to mental health, such as subjective well-being, resilience, optimism, quality of life, and other aspects emphasized by positive psychology.[2]

TABLE 2

Stages of Creation

Preparation,

Incubation,

Intimation,

Illumination

Verification

As described by Wallas [2]

Creative Pursuits

If we go by classical approach, we may expect domain changing effect from creativity, but when we talk about creative pursuit we mean a process or an endeavour. To understand this, let's have a look at most democratic classification of creativity which accepts the division of class (having high intelligence, divergent thinking and creative personality) and mass.

Newer definitions have made the boundaries of creativity more permeable and have allowed the majority to enter in the zone which was philosophically reserved for minority elites. Earlier creativity was classified as Little C (everyday creativity) & Big C (Breakthrough Creativity), but Kaufman and Beghetto[3] introduced and inserted two more Cs in the picture and made a model which has entry gate and scope for everybody and proposes that persistent effort helps in reaching at a higher level.

Table-3 Four –C model of Creativity given by Kaufman and Beghetto

Type of Creativity	**What does it include**	**Learning process**	**Whom does it impact**
Mini -C	Transformative	Changes in	Individual

	learning,meaningful interpretations of daily experiences	understanding	
Little -C	Creative actions and thoughts	Out of box thinking in anything we do	Individuals and their zone of influence
Pro-C	Creative acts of experts/experiences people	Learns within an organization,community or domain	Organization,field system of practice.market
Big -C	Eminent creativity.exceptional people	Autodidactic, unconventional thinking	Culture,society and the world

Creative pursuits include activities resulting in all the Cs of Kaufman and Beghetto. They can be classified as

1. Everyday Creativity
2. Scientific Experiments/Innovations
3. Arts

Arts include:

1. Performing arts (music, dance, theatre, singing and film)
2. Visual arts (Painting, Photography, Sculpture)), Design, Craft
3. Literature (writing, reading and attending literary festivals)
4. Culture (going to museums, galleries, art exhibitions, concerts, theatre, community events, cultural festivals and fairs)
5. Online, Digital and Electronic arts (animations, film-making and computer graphics)

This range is very accommodative, and anybody can indulge in one or other creative pursuit. It is noteworthy that both the practice and research in creativity appears to be by mental health professionals other than Psychiatrists. One reason for this perhaps is that the realm of creativity is thought to be restricted only to high achievers/eminent people.Clinically creativity has always been considered an area which requires special expertise from the service providers as well as service users.By having a overinclusive,all accommodative definition and a wide range of activities it is possible to overcome this barrier .

The research evidence for creative pursuits to promote Mental health and well being

Creative art forms are generally believed to be having an entertainment value. We enjoy reading poetry, viewing dance and drama , listening music or taking part in all these as a social activities. While we wholeheartedly enjoy these, we ae not sure about their usefulness. But the very purpose of creating the Dance (which can be seen as an amalgamation of several art forms including literature, poetry, sculpture/painting, music and drama) as stated in Natyashastra Bharat Muni is credited as the author of Natya Shastra, which covers ancient Indian dance, dramaturgy, poetics, and music[4] .The exact time of the text is unknown but estimated to be between 200 BC and 200 AD. In the first chapter of Natyashastra Bharata describes that Brahma created dance in order to alleviate stress, negative feelings like fear, anger, lust, jealousy and to calm the mind. This new creation of dance by Bramha was in response to the plea made by Indra (the king of haven according to Indian mythology) and his associates when the whole universe was engulfed in negative feelings and people were suffering. Mythology aside, Bharat Muni's narrative demonstrates a profound understanding of how art form can help deal with our emotions. He then goes on to systematically code the various art forms.

Thus in India, the original purpose of creative art-forms was not just providing entertainment as it is often practiced today. Its main purpose was therapeutic which was to alleviate the suffering of mind, an art form with body as a medium was chosen.

Verbal language often involves a degree of cognitive processing, as it does not offer a direct avenue for our sensory experiences. It serves only to share labels or names what we have seen or heard or thought. Perceptual experience may be far more subtle, subjective, and contextual.[5] Body movement or visual language offers an opportunity to tap into such sensory experiences and allow suitable expression. One may hypothesize such an avenue allows "processing" or shaping of fears and trauma, through agreed goals in art therapy.

When someone has not managed to distil their feelings or thoughts either due to cognitive or emotional challenges, verbal communication may not be easy and may lack clarity.[6] In such situations, body movement or visual language offers an alternative avenue which is not restricted by vocabulary or verbal syntax or semantics. Such non-mimetic forms of expression such and dance and

body movement, visual art rely on visual or physical idioms to mediate our psychological pain, anxieties, cognitive dissonance, and confusion.

Wellbeing connections

Many studies also tell us about transformational and positive mental effects of creative pursuits. Based on two meta-analyses, Zhao et al[7] has revealed a negative association between creativity and negative well-being and a positive association between creativity and positive well-being.

When creativity is pursued three psychological mechanisms play a role in promoting/ maintaining positive mental health – Authentic Self, Positive Focus and Flow.

1. The Authentic Self – All creative pursuits give a purpose and avenue for expressing the self. This process makes life meaningful. a way to express the self and a meaning.

2. Positive Focus – All creative pursuits orients mind for positive focus. Purposeful creative involvement promotes wellbeing. Mihalai Czikszentmihal[8] in his book titled CREATIVITY beautifully explains the difference between entertainment and creativity. "Entertainment keeps chaos temporarily at bay, but the attention it absorbs gets wasted. On the other hand, when we learn to enjoy using our latent creative energy so that it generates its own internal force to keep concentration focused, we not only avoid depression but also increase the complexity of our capacities to relate to the world."

3. Flow - When challenges closely match a person's abilities, one can enter a state of flow. In flow there is complete merger of action and awareness and loss of sense of time. This is experienced by individuals across a range of activities from creative pursuits to sports.

According to Positive psychologists, the Experience of Flow enriches life, does away with boredom and imparts meaning. It's important to note that one can reach the state of flow by continuous engagement.

Sadly the research till very recent times focused only on studying creative people or people who are proficient in Big 'C' and their mental illnesses. So much so that the value of Creative thinking as a life skill was kept aside. In India, we have often explicitly or implicitly through societal values, discouraged our children from choosing creative professions in our pursuit of material

success and security. However the recent research appears to have taken a better course by inspecting many realms of creativity and appears more useful to clinical practice. Now the research has been looking at Creativity as an important way of enhancing and maintaining a sense of wellbeing.Feeling happy while dancing ,singing, painting,or doing some activity which 'creates' something however small/productive ,is known to all of us. But beyond feeling happy the research shows that it also can be useful for our overall health.A recent large scoping review[9] . showed how the arts can have an lasting impact on several components of health.They are summarised in the following tables.The WHO also advocates a cross sectoral and multi disciplinary approach for popularising the art interventions as a cost effective tool to promote health.

prevention and promotion through arts

- Affect the social determinants of health
- Support child development
- Encourage health-promoting behaviours
- Help to prevent ill health
- Support caregiving

Management and treatment through arts

- Help people experiencing mental illness;
- Support care for people with acute conditions;
- Help to support people with neurodevelopmental and neurological disorders
- Assist with the management of noncommunicable diseases
- Support end-of-life care

Recognize the added health value of engagement with the arts by:

• Ensuring that culturally diverse forms of art are available and accessible to a range of different groups across the life-course, especially those from disadvantaged minorities;

• Encouraging arts and cultural organizations to make health and well-being an integral and strategic part of their work;

•Actively promoting public awareness of the potential benefits of arts engagement for health

• Developing interventions that encourage arts engagement to support healthy lifestyles

Cross-sectoral nature of the arts and health field by

• Strengthening structures and mechanisms for collaboration between the culture, social care and health sectors, such as introducing programmes that are cofinanced by different budgets;

• Considering the introduction, or strengthening, of lines of referral from health and social care to arts programmes, for example through the use of social prescribing schemes; and

• Supporting the inclusion of arts and humanities education within the training of health-care professionals to improve their clinical, personal and communication skills

Research has recognized the practice of creative pursuits can be beneficial in influencing positively psychological, physical and social components.

Psychological Components

1. Aesthetic engagement
2. Involvement of the imagination
3. Sensory activation
4. Evocation of emotion
5. Cognitive stimulation

Physical and Social Components

1. Physical activity
2. Social interaction
3. Engagement with themes of health
4. Interaction with health-care settings

Responses to creative pursuits

- Psychological -enhanced self-efficacy, coping and emotional regulation
- Physiological - lower stress hormone response, enhanced immune function and higher
- Cardiovascular reactivity
- Social -reduced loneliness and isolation, enhanced social support and improved social
- behaviours
- Behavioural - increased exercise, adoption of healthier behaviours, skills development

Creative pursuits and Child wellbeing

Art can enhance child through improved mother-infant bonding, support the child across several domains ranging from their speech and language to motor skills and extending to neuro-cognitive development, educational attainment and emotional wellbeing.

'Motherese' or baby talk has musical components. Lullabies have been part of every culture. These songs sung by mother to the infant has been thought to enhance maternal nurturing behaviours. It is found to reduce stress hormones both in mothers and their infants.It can increase perceived emotional closeness and strengthen the mother–infant bond.[10]

Music plays an important role in reading, language and auditory skill development. Studies have shown structural differences in grey matter and white matter in children who engage in music (especially during early childhood) compared with those who do not[11,12].

Engaging in arts early in life facilitate autonomy, competence and relatedness and lower the risk of developing social and behavioural maladjustment issues in adolescence. [13]

Arts engagement, including music therapy and dance, can reduce internalizing symptoms such as anxiety and depression in children and adolescents. In adults with a mental illness, activities such as choir singing, art-making, expressive writing and group drumming reduces mental distress, depression and anxiety while simultaneously enhancing individual and social well-being with similar results for older adults. According to neurobiological theories and research, these benefits may reflect the modulation of serotonin and other neurotransmitters, decrease in cortisol and other stress hormones and reduction in inflammatory immune responses. Music has been found to improve sleep quality, sleep efficiency and time to sleep onset, with greater effectiveness than meditation.[14]

Another interesting study is worth mentioning. This study examined the effectiveness of Hip-Hop dancing on participants' cognitive skills.[15] Some of

these abilities, like working memory and critical thinking are connected to a better performance in STEM disciplines- i.e., Science, technology, Engineering and Math subjects. Participants were challenged with asset of digital tasks which assessed key areas like working memory, speed of mental rotation, problem solving skills, and the process of 'theory of mind'. The authors controlled confounding factors like demographics and dance style experience other than hip-hop dancing. The Hip-Hop dancers had much faster mentally rotating images of hands at greater angle disparities. They also displayed greater accuracy in identifying human facial images with positive emotions.

Non-pharmacological interventions like music –visual arts therapy have promising potential to complement traditional medical treatment , in child health care . They facilitate recovery and promote resilience and well-being. Music therapy and other music-based interventions have been widely used in the clinical treatment of children and adolescents globally. [16] Another review which was presented as a conference paper and available online by Paušić et al [17] assessed the benefits of dance and movement therapy in child mental health. It is understandable that a performing art form like dance helps active expression of emotions. In addition to this dance as a therapy was found to be useful in improving body image, perception of self and others. Increase in the tolerance towards others, improved ability towards others were the other advantages. It was also seen to be effective in reducing problematic behaviours. Dance led to a better parent –child bonding and made parenting much easier in the case of children with special needs. It helped children in perceiving both their as well as others' competency. As commonly seen by the dance trainers, through dance a gradual welcome transition takes place in body stance, balance and movement control. This was reported by the authors even in children with disabilities. It acted as a remedy for initiating and maintaining motivation for physical exercise especially in adolescents avoiding physical exercises and having increased weight.

Table – 5 Benefits for Child development from arts engagement

From Activities at home

- Child–Parent bonding
- Better control on managing emotions
- Improving body image
- Reducing problematic behaviours
- Tolerance towards siblings
- Reduction in parent-child conflicts

Table-6 Engagement in Arts through formal training

- Disciplining happens without one's awareness
- Better social skills
- Physical exercise/body fitness
- Better communication skills
- Increase in confidence levels
- Feeling joyful, eagerness to show one's talent/new lessons/performance/product of training in whatever form can bring motivation further which can be generalised to other areas of learning
- Better time management

Creative pursuits and art activities in Schools

Schools around the world now are incorporating art concepts and activities into their curriculum. Earlier known as extra-curricular activities ,they are now appropriately called 'Co-curricular education'-CCE. Various art based

projects have been utilized with a particular focus on enhancing child mental health in schools. In fact there is a move to include arts as a part of the core curriculum as opposed to being seen as an add on (Table-) These programs have produced positive results. It was reported that the inclusion of these artistic activities (theatre/ dance/ music/ newspaper) improved students' verbal and non-verbal expression and increased their confidence, concentration, engagement, cooperation and collaboration with peers and adults. Some schools even see a decrease in behavior problems and improvements in attendance, grades and test scores [19]

- 'PERMA' model through music fecilitation- individually focused music and relationship-centred music programs in schools to increase skills and abilities of the students and to improve the psychosocial well-being of the students and the community.[18]
- SPEECH BUBBLES project - a theatre program aimed at developing various skills in children with communication difficulties. It should be noted that this program was not just a theatre program, but was based primarily on the characteristics of creative theatre, related to the fun of directing and games that focus on the learning process and not the artistic goal presented.[19]
- ENACT method - Place specially trained actors in classrooms to interact and socialize with students. Their goal is to create a "safe container" in which students can explore and solve real-world problems.[20]

- The IRIS Project -PROGRAMO JUAGO - specialized in creating creative and collaborative play programs for school children in Spain. A serious game or game for children aged 11 to 15, based on a specific scenario or role-playing scenario, to provide a fun, intuitive and motivating learning environment and to raise children's awareness of current issues. It is also a manual for teachers and trainers with a well-organized and detailed presentation of interactive games such as role-playing scenarios, quizzes, thematic drawings and sports activities with role rotation. [21]

- Drama in Education (DiE) 1000 students, aged 3 -18 years. The school had over 200 teachers, with a Special Educational Needs Department of

over 60 teachers and assistants in Delhi .Used Drama techniques to discuss social issues[22]

- The Creative Partnership is an English initiative to promote creativity all along the scholar curriculum. the impact on their self-confidence and self-esteem.This is a programme on well being initiation [23]

- Finland has a history of government support for the arts and culture within education with the aim of strengthening children's creative skills, cultural competence, and individual and social well-being, as well as supporting wider determinants of health such as educational attainment. Music, visual arts, and arts and crafts are core subjects in comprehensive primary schools, and students in upper secondary education must take and complete five compulsory arts and skill courses in music, arts and physical education. In vocational education, compulsory core studies also include arts and skills subjects, and there are wider opportunities for children and young people through community arts programmes in municipalities and arts education in afternoon clubs and day care. There is also continuous arts education available for teachers. [24,25]

Do's and don'ts while pursuing art activities

Suggestions for Parents/teachers

Do's

- Focus on enjoyment of the activity
- Keep the choice for the child to change activity
- Keep the regularity
- Guide the child
- Allow child to experiment within the framework
- Encourage the child to focus on the process
- Permit the child to express his/her views
- Motivate the child to share their work with (significant) others

Don'ts

- Do not compare with others
- Do not aim at perfection
- Do not continue the activity if child shows the signs of resistance even after few weeks of classes. Try switching over to a different activity
- Do not keep long term goals

The website of Scotland's national curriculum authority, Learning and Teaching Scotland (LTS), contains a section entitled “What is creativity?” It recognizes that “students who are encouraged to think creatively are more interested in discovering things for themselves; more open to new ideas and challenges; more able to solve problems; more able to work well with others; and more effective students. Creativity has long been a popular term in education, but wellbeing is a relatively new addition to the educational lexicon and suggests that it is about young people's wellbeing in the broadest sense and not just their physical health. The connection between the two concepts is usually not explicitly stated, although it is often implicitly assumed that students' motivation increases when a "creative" approach to teaching and learning is taken, which in turn increases their personal well-being.[24 26]

Methods to incorporate art forms in teaching school subjects

1.Use of story telling technique

2.Description through daily experiences

3.Ask students to narrate their own experiences

4.short skits based on that particular section

5. Poster making

6.Making a song/poem out of the text content/main components

Sample list of activities for parents and teachers to involve children in creative activities

- Keep a “Busy Box” with new and recycled play materials such as string, scraps of paper, pancake pans, paddle sticks, stickers, and straws.Your child can make anything from these materials
- Empty cardboard box for decoration. They can build a house, a robot, a truck, an animal, whatever interests them
- Empty kitchen towels, small plastic juice bottles or old gloves or socks for making dolls.
- Take a nature walk and look for natural materials to create works of art. Your child can use it to draw, create a collage or a nature doll, or paint.
- Use software applications or computer programs to create digital art. For example, there are apps that let you draw or organize photos into collages for free .
-

. Children enjoy stories For example, when we read a story to a child, you may notice that they move their arms, legs, or face, imitating what is happening in the story. The activities of reciting the nursery rhymes usually involve the children first imitating the activities and then actually learning the songs.Theatre and storytelling also provide children with the opportunity to develop and practice vocabulary and learn the structure of stories.When children take on the roles of a caring nurse, a teacher, a police officer, a father and a mother, they see the world from someone else's perspective. This helps them develop empathy.

Some theatre activities to stimulate children's interest and imagination:

• Carry a disguise box or bag. Use old clothes or find cheap and fancy clothes

• Help your child make masks and supplies from home/school waste

• Organize a puppet show or other puppet show. You can also use a cardboard box to make a puppet theatre

• Set up a tent in your backyard/school and pretend you are going on a camping adventure

• Staging daily events. It could be going shopping, having a pet, going to the zoo, riding the bus, etc.

• As the story progresses, encourage children to act out the story using movements or sounds.

• Help them create a special video with a video creation app and share it with others.

Interventions used in drama therapy for healing and positive change,

(Whipple, 2012)[26]
Create visualizations
• Create spontaneous fill-in-the-blank stories.
• Role-playing game with role cards
• Creating poetry
• Recitation, enactment, or interpretation of literature
• Retelling or reenacting familiar stories
• Stories told through figurines, puppets, or objects
• Story summation and titling
•

Art activities in Intellectual disability and children with special needs

Intellectual disabilities pose a great challenge to the children and their carers-parents and teachers.Though research strongly suggests that the art

activities can be a good source of educating these children, the general art classes stigma becomes a barrier and seldom these children get to attend these classes. Again most of the parents strive hard to make their children with intellectual disabilities somehow try academics taught in school. And consider the time spent on art activities as a waste of energy and time.

A recent study has shone light on the usefulness of play and playfulness of children with intellectual disability.It has shown that there might be a role for activities like clowning play intervention to aid their development. [27]

In art therapy, digital art therapy is a new method in which clients use digital media to express themselves creatively. Art therapy with digital media has become an important experience that offers young people with intellectual disabilities, who have difficulties with expression and communication and a feeling of lethargy, the opportunity to awaken curiosity, enjoy creative activities and bring positive emotions to life to express. Therefore, it is believed that a deep understanding of the characteristics of and the differences between traditional and digital media is required and that their complementary use in creating therapeutic goals and art therapy is important.[28]

An interesting study examined aspects of implicit relationships in mothers and adolescents with intellectual disability using an arts-based nonverbal tool, the Joint Painting Procedure, JPP.[29] The results contribute to uncovering and better understanding the relationship dynamics that develop between mothers and adolescents with intellectual disabilities.The JPP has been shown to provide a meaningful, arts-based assessment of the implicit and explicit aspects of relationships developed during interactions. Because of the verbal barrier, it is challenging to know the inner world of adolescents with intellectual disabilities in general and their experiences related to the relationship with the mother. This study used an arts-based method to learn more about the relationship between adolescents and their mothers. The engagement and accessibility ofarts activities for this population is a key strength of the JPP, as other arts-based research with adolescents and young people with intellectual disabilities has found. It offers direct access to the life experiences of these young people in the context of the relationship dynamics with their mothers. The results suggest the presence of a number of emotional characteristics in the relationships of adolescents with intellectual disability with their mothers that are similar to those of typically developing adolescents. This also shows that these hidden expressions can be changed and transformed during the painting process.

The influence of artistic activities on the parent-child relationship in cases of intellectual disability,

1, From dependence to autonomy,

(2) Painting together as a means of verbal communication

(3) A sense of playfulness and joy.

In 2015, Hui, Chow, Chan, Chui, and Sam in China conducted two studies on classrooms and creativity in Hong Kong. The study directly addresses the issue of well-being, as the authors note that academic success in an Asian school leaves no room for happiness; Rather, learning is "serious work". They consider that the most effective creative wellness courses are based on active participation in artistic activities such as visual art or theatre. The final observation one can make is that most training programs analyzed report that positive emotions are the central outcome of their programs.[30]

Music, sound, movement and dance: creative activities for young child Young children generally enjoy singing. They like repetitive songs and simple melodies. They can make up their own lyrics to famous songs, and the lyrics often come from events and people around them. Singing helps children understand the difference between fast and slow, long and short, high and low, loud and quiet. Children will be able to invent activities and dance steps to the sounds of music. Movement with music is also useful for releasing energy and emotions. For example, we often see children jumping for joy or stamp their feet in anger.

These are some ideas that can encourage children to sing, dance and move creatively:

- Fly like a butterfly, crawl like a caterpillar or jump like a frog
- Build homemade instruments. For example, a drum set can consist of a pot, a lid and a wooden spoon
- Reports noises in a regular rhythm, e.g. . the ticking of a clock or a leaking faucet
- Encourage child to clap, tap, march, or beat to the beat

- Watch short videos of animals making sounds and moving in nature. Child can make the drum sound like a stomping elephant and the shaker like a slithering snake. Or if he likes to dance like a monkey
- Listen to the musical pieces Peter and the Wolf or The Carnival of the Animals, or similar songs in any Indian languages in which the sounds of different instruments represent different animals. Guess which animal the music represents and try to imitate their sounds
- Sing songs, chants and nursery rhymes such as “Incy Wincy Spider”, “Head and Shoulders”, “Frère Jacques” or “The Wanky Donkey”

Thus it can be said that arts education has a positive and significant impact on psychological well-being of children. In addition, research also suggests that creativity and self-esteem positively and significantly influence the relationship between arts education and psychological well-being.[31]

Creative activities for pre-school goers with diverse abilities

Creative arts therapies have been proven to improve the behavior, mental well-being and functioning of people with intellectual disabilities. Playing an instrument, acting a role, creating an image, moving freely, or combining creative media can offer a person a different way of being. This can stimulate new behaviours, skills, expressions and emotions, which can then be transferred into everyday life. The multisensory nature of creative art therapy can promote sensory regulation and support psychomotor development. For children and adults with severe and multiple learning difficulties or complex needs, creative art therapies can work on the sensory level, connecting to the body and stimulating the senses. Self-image arises through exploration and creativity. Mothers of children with intellectual disabilities are heavily burdened with care work and the children themselves have difficulty dealing with their emotions. Creativity can then become a tool to express their concealed emotions.[32]

Some examples of activity modifications for children with disabilities

- Needs help developing creative play skills. The parent/teacher can model simple activities such as: Show the child how to growl like a monster or play the drum, or break the activity down into simpler steps, or use written or illustrated instructions to help the child understand what to do.
- Sensory sensitivity, give the child tools for touching objects like play dough, playing music more gently, or slowly introducing different textures and colours.
- Visual impairment or motor problems, use larger materials and tools - for example, create collages with large leaves instead of flower petals, or use thick pens instead of pencils.
- Has a lot of energy, encourages larger movements such as jumping, swinging, grabbing, squatting or shaking
- Has limited mobility. Gather play materials for the child and place them within easy reach.

Examples of art activities to improve bonding in mother-child with special needs dyads

► Mirror each other's movement

► Create costumes using art materials for a party

► Relieve stress through drumming, moving and drawing

► Play movement charades

► Draw on the same paper or move together

► Create a gift box for each other

► Create a 'Thank you' card

► Create artwork and movement together, and share

Instructions which can be shared with the child before starting the activity

- There is no right or wrong way to make art in art activity
- Child has permission to "screw it up"
- He or she does not need to make art pretty, precise, or even understand
  (In fact, more interesting things sometimes arise from the strangest or ugliest pieces!)
- The goal of using the arts and visual materials is not necessarily to create something you would display, (although you might.)
- The purpose of art is to tap into different parts of the brain using the imagination, metaphor, and images to gain new perspectives and solve problems in new ways.
- We can certainly also create something beautiful as part of art activity, but it's not the only way to work.

The study as part of the nationally representative National Study of Child Development examined whether creativity like participating in activities such as free writing, storytelling, crafts, painting, drawing, or acting at age 7 is associated with a lower risk of social maladjustment and behavior in children in early adolescence. Data from 7,558 7-year-olds who were socially and behaviourally "stable" at baseline were analysed. Associations have been found between moderate and high creativity and a lower risk of symptoms of internalizing behaviour (including depression and withdrawal), externalizing behaviour (such as fidgetiness and anxiety), as well as a lower risk of social and behavioral instability. The associations were independent of social, demographic, educational, parental, academic, and personality covariates and robust to a range of sensitivity analyses. [33]

Thus it can be agreed that encouraging creativity through various ways in children and adolescents can have a multitude of benefits for mental

health and wellbeing in childhood which can further be of preventive value in future life.

Training in creative modalities – Mental health issues

- Therapeutic aspects of routine training in various art forms in India

All over India we come across children attending training for various art forms. The benefits of these classes have not been studied through systematic research. However our experience says that these classes do serve some useful purposes from the developmental view point.

Benefits from arts training classes for children

1. Child has exposure to a different peer group at times of different age group , other than his/her usual peer group e.g. school mates.
2. Group singing, dancing, drama slowly make children more confident and or comfortable in expressing themselves
3. A variety of cognitive skills – sequential memory, multitasking, attention and concentration etc improve.
4. Through drawing and painting, drama and dance child gain a medium to express negative emotions like aggression, anger etc. expression of which are usually not always socially accepted or encouraged
5. The process of engaging in an art form also allow in coping and managing negative emotions

Difficulties in art training classes which might pose threat to mental health of child

1. Parental expectation (explicit or perceived) for the child to be proficient in the art form, excel in exams or generally, perform on stage can put a psychological pressure on the child. This focus on the 'product' does not offer the psychological benefits offered by focusing on the 'process' of creating art.
2. Similarly, comparison within a learning group of an art form, from

teachers or parents has the similar disadvantage where the focus shifts on the art product rather than the process.

3. Training in art should be an opportunity not only to learn a new skill, but an opportunity to offer some joy and enrichment to the child. If the process of learning art involves undue pressure on the child's time, leave the child tired and not adequately rested or leave the family in financial stress it defeats the purpose.
4. The arts training in any art form usually involves lessons in basics and this can be quite tedious process. Child and parents can both perceive this as boring , contrary to their expectation of art-form. Thus child and parents might get discouraged early. It is important to be mindful and sensitive around the child's strengths, aptitudes and make the initiative worthwhile.
5. While we hope the process of training in art offers an alternative peer group which might broaden the social horizon for the child, it can come with the challenges of another learning microsystem, involving risk of favouritism from art teacher or negative peer relationship or bullying which would have a negative effect on the child's psyche.

We suggest the following strategies to cross these hurdles

1. School curriculum itself needs to have stronger and more focussed art based programmes.
2. The children who show a good orientation, enjoyment and interest can be referred for specialized training outside school hours.
3. The parents wherever possible need to join art based training classes themselves which will lessen the pressure on the child.
4. Psychiatrists should conduct art teacher education sessions in schools and art institutes drawing their attention towards the positive learning experiences in the training environment in art classes.
5. The parents need to be educated through schools about the benefits of arts as as a tool for resilience and mental health promotion in children .
6. They should be made aware of the fact that despite not achieving to be an expert artist child can still have multitude of health benefits from learning

any of the art forms. It should not be thought of as a waste of time, money and energy.

The role of creative pursuits in the mental health and wellbeing of Young adults

Participation in creative activities that are deemed enjoyable can create opportunities for young people to be exposed to positive role models and peers. Developing positive social and personal skills such as confidence, a sense of belong, coping skills and self regulation is pivotal for a young person's well-being. Young people may be able to develop these skills in spaces where they feel physically safe and emotionally supported. This coupled with consistent structure and boundaries, supportive adult relationships, and opportunities for mastery can contribute to their enhanced wellbeing.

A gang, is loosely defined as a group of persons, usually youths, who share a common sense of identity and who generally engage in criminal behaviour. With lack of positive role models and social instability, children and youths from socially deprived backgrounds are vulnerable to seeking a sense of belonging and or identification through gangs. However, even children who come from homes which enforce positive values and norms can be at risk of joining gangs as they encounter different standards of behaviour in their friends' homes or other community settings .While parents are the main socialising agents of children when they are young, as they grow older their peers become increasingly influential.

Young people may be less likely to become involved in gangs if they have good relationships with their parents and family members and are able to openly discuss their problems with them. Further, as friends play a critical role at this stage of development, spending time with a prosocial peer group may also protect against joining a gang. Cultural activities like group music-dance – drama can provide an opportunity for positive and pro-social peer group.

Wellbeing Benefits Adolescents and young adults Participating in arts-based activities

-
- Opportunity to develop and master new skills
- Improvements in one's confidence, self-esteem and self-efficacy
- A platform for creative expression
- An avenue to express emotions
- Creates a space for social interaction
- A chance to develop positive relationships with others
- Engage with peers from different backgrounds and potentially broaden their social circle
- Challenge existing thoughts and ideas and make new friends
- Can lead to a sense of purpose and belonging
- Can provide a safe space for young people to participate in a constructive activity with their peers whilst being supervised by positive role models
- Provide an alternative way to engage in a healthier lifestyle
- Better acceptance of their body image

Research conducted at a variety of performing arts programmes yielded similar findings with regard to the benefits of participation in creative arts. Adolescent girls participating in a performing arts programme in New Zealand reported high levels of positive emotions, enthusiasm, pride and being able to "be themselves"[34]Another study aimed to explore the lived experiences of four young people engaging in a dance community project. Engaging in dance appears to contribute to the overall emotional wellbeing of these participants. Having a safe space to engage in a prosocial activity offers an alternative to the negative behaviours, including drugs, violence and gangsterism, that they are confronted with in their community. Researchers opined that dance programmes and other recreational facilities have a potentially important role to play in the promotion of wellbeing, particularly in places that have limited access to resources.[35]

Art interventions have been shown to have a positive impact on children and adolescents' ability to cope with and recover from anxiety related to environmental change. Applied theatre in particular has been proven to help

young people develop “creative resilience” and “ hope” and encourages young people to take social and political action in response to the the changes around. The original intent of this project was to work with grassroots professionals and established youth theatres to explore how drama can strengthen the well-being and empowerment of children and young people, both through direct approaches to disaster recovery and through coping with environmental anxiety and ecological pain experienced at a social level. The study conducted during the pandemic drew its data from online interviews with 12 youth theatre professsionals. They found that there is a trend towards “resilience and survival” among young people in response to disasters and the climate crisis for which the fine arts can act as a vehicle of change. Authors argued that youth art and performance are fighting for their survival and that the potential of professionals to support young people in this work is increasingly threatened.[36].

Caution needs to be exercised while advocating art activities for adolescents and young adults. It is advisable that the art activities involve a proper guidance or supervision by a guide who is non-judgemental but at the same time is firm and facilitates creativity in the right channel. A review found evidence that arts interventions can have negative outcomes; lower anxiety was found in a control group than those in a drama workshop intervention group. In a study of the effect of listening to rap music on college students, among other findings, a higher likelihood of thinking about engaging in sexual activity, drinking alcohol, and marijuana use when listening to rap music than when listening to most other types of music.[37]

Some of the benefits of engaging creative pursuits lie in the creative act, whilst others lie in the social milieu of the creative activity. It is difficult to argue the creative pursuit can be harmful. However, the environment and peer relationship needs to appropriate for maximum benefit. Hence, while advocating creative pursuits as a health modality for young adults one needs to be mindful of the environment and setting of such creative pursuits.

Creative pursuits and Adults

Maintaining mental wellbeing can be challenging in today’s world. Therefore, there is a constant search for effective tools to maintain mental health. A recent

study identified and examined the ways in which the arts have been used to improve the well-being of communities in the United States[38]. The review examined 44 publications with combined study populations, representing a total of 5,080 studies and participants, including marginalized populations. It highlights positive associations found across a wide range of psychological, physical and social outcomes, including improved self-esteem and formation of identity, cognitive function, physical balance and fitness. This overview shows that art comes in a variety of forms (e.g. music, dance and theater) and forms of participation (e.g., active, open, or both) can contribute positively to individual as well as communal or group well-being. It has been seen for many years that participatory arts projects make a significant contribution to the health and well-being of local communities, only for the positive results to diminish as funding for short-term projects dries up. At the same time, there is growing evidence on behalf of arts and health organizations that creativity and art have a significant impact on people's health and well-being, their emotions and their interactions within themselves and their neighbors.[39] The research shows how arts and health professionals can learn from each other and work more effectively with local communities. The findings based on qualitative research evaluating the innovative and large-scale 'Be Creative Be Well' initiative (part of the wider Well London programme), which has produced around 100 different small-scale participatory arts projects across 20 of London's most disadvantaged people confirms this.

Public places where clinicians can advice arts to be used

1. Primary and High schools
2. Medical and psychiatric wards
3. Out patient units
4. Prisons
5. Rehabilitation settings
6. Private Clinics
7. Public transport hubs such as railway or bus stations, airports, subways etc.

Key features in the advocacy of the community arts initiatives

- A belief in providing opportunities for individuals and communities
- Inclusiveness
- Forging links with community settings
- Promoting innovation and participation
- Facilitating access to creativity for people with disabilities
- Potentially providing the means for the resulting creative products to reach a wider audience

Clinicians can highlight the results of this research by encouraging people to engage in creative activities in daily life or in specific circumstances

• Participate in art therapy. No artistic skills or special talent are required to participate in art therapy.

• People of all ages can benefit, including children, teenagers and adults.

• Research suggests that the mere presence of art can play a role in improving mental health.

• Research has shown that artwork displayed in hospitals helps create an environment in which patients feel safe.

• Art plays a role in promoting socialization and maintaining identity outside of the hospital.

• This is not the same as art/dance/music classes.

• While art classes focus on teaching a technique or creating a specific finished product, art therapy focuses more on allowing clients to focus on their own inner experiences and the process of creating art.

• When creating art, people can focus on their own observations, ideas, and feelings.

Participants in art therapy are encouraged to create works of art/dance/music/theatre that express their inner world rather than creating something that is an expression of the outside world.

Receptive Music/dance/drama activities - Here participants listen to music/watch dance, drama , paintings, rather than producing it. Distinctions between these differences between active and receptive interventions vary and comparative studies that isolated specific components of musical engagement have yet to be conducted.

The distinction between active and receptive interventions varies and no comparative studies have been conducted to isolate specific components of musical engagement. An interesting study examined the connections between musical behaviour, lifestyle and mental states while staying in shelter during the Covid-19 pandemic. An online survey examined music experiences, lifestyle changes, stress levels, music behaviour, media use and perception of noise in the environment. Responses were collected from 620 people in 24 countries, with a large percentage of responses coming from the United States (ranked 55th).5%) and India (21.4%). Structural equation modelling (SEM) analysis revealed a causal relationship between lifestyle, stress and music behaviour. Things like changes in stress levels, occupational hazards, and staying at home contribute to changes in the music experiencee.g., relieving emotions through music, feeling emotions through music, and tuning in more. Changes in stress levels were related to changes in occupational risks and income, and people who began living with other people, especially children, due to the epidemic showed fewer changes in their stress levels. People whose stress levels varied more were more likely to use music more specifically to support their mental well-being, such as calming emotions, influencing mood, and relaxing.[40]

Suggested list of Receptive art activities

- Listening alone to pre-recorded music
- Watching live dance with pre-recorded music
- Watching drama/movie
- Watching dance videos/live movements of a dancer
- Viewing visual art such as paintings, sculptures or art installations
- Museum visits

Reflection, discussion on what was viewed/heard would bring larger benefits.

Suggested List of Active art activities

- Music activities that involve interactive engagement, playing, and creation of music by with an instructor
- Dance activities where the person mirrors the movements of the instructor, leads the group with his/her movements, communicates through his /her

Receptive art activities

questions such as 'what if?', 'I

Advantages

l art ranging from doodling,

1.Any art form can be chosen

sion of art forms.

2.Participants can be easily engaged

3.Multiple forms can be tried

4.Participant can participate despite physical/psychological disability

5. More suitable for geriatric age group

Disadvantages

1.Efficacy lower than active forms

2.Sustained engagement is difficult

3.Participants may grow bored easily

Active art activities

Advantages

1.More efficacious as compared to receptive art activities

2.Better communication through active participation of the client

3.Person can express his feelings through the active means of arts

4.Better emotional regulation through artwork(dance/music/painting/drama)

Disadvantages

1. Participants may be hesitant to try a new activity in which they are not trained
2. Participants may be bothered about making mistakes/awkward movements/their voice quality
3. May pose high resistance
4. Usually combination of art forms in active way is difficult to practice.

Sample 1.Art sessions based on facial expressions

(Can be shared with a dance/drama artist for any group of interested individuals)

Phase 1- viewing eight basic emotions- Rasas in Indian aesthetics.

The instructor brings out sringara (love) , Veera (Valour), Karuna (Sadness/mercy) , Adbhuta (Wonder) , Hasya (Humour) , Bhayanaka(fear),Bheebatsya(Disgust) ,Roudra (Anger) through her expertise.

Phase 2- group members are asked to identify the type of emotion.Each member is asked to remember any story related to that particular type of emotion.Slowly they can be asked to narrate any incident where they felt a particular type of emotion

Phase 3- Group members are invited to remember the incident and asked to enact the emotion.

Phase 4- Members can verbally share their feedback.The instructor speaks about the importance of expressing emotions in managing mental health.

Activity sessions based on mudras –gestures in Indian classical dance

- Instructor can work in variety of ways with gestures.
- To begin with recite and show 28 single handed gestures-asamyutha hasthas and 24 double handed gestures .The group needs to watch.
- Idea is to create an interest and curiosity.
- Then hold the first hand pataka- with palm extending all fingers and holding straight.
- Ask the group to imitate.
- Ask ‘What all can be communicated through this gesture?’
- Generate answers . Extend it to a movement. connect it to a meaningful communication.
- Similarly for other gestures.
- Do remember through out that the idea is to achieve a

better expression and communication of feelings, body movement and not to learn all gestures according to text like in traditional artistic teaching.

Drama techniques that can help emotional regulation

- Situational enactments
- Roleplaying
- Improvisations
- Puppetry
- Storytelling
- Theatre games

For instance, if one is battling a significant conflict, like a hateful relationship with wife, the instructor might draw upon a sequence where the husband needs to be in the shoes of his wife and say things from her perspective. Drama can be used at its best in groups, where each member is assigned a particular role. As one rehearses ways to express self, either by letting out their emotions through effective storytelling or using tools to depict things, they gradually pick up the art of looking at their problems using a new pair of eyes.

Art instructor training programmes focussing on mental health

There are several art or creative pursuit based therapeutic interventions recognised and researched across the world ranging from art-therapist, dance and movement therapist, music therapists or drama therapist. The list is not exhaustive. Across the world these have evolved and continue to develop. In India we are still at the infancy. These therapeutic interventions are not routinely incorporated within our main-stream mental health treatment facilities.

The professions themselves do not have large scale training or accreditation programmes. While work continues to embed learning and up-skilling for future we might need to think creatively for the more immediate future where we do not have these therapies embedded or professionals available. We might need to think of the skill-set in the room to facilitate delivery of the benefit creating art. The art teaching schools are numerous and often can be found in smallest of the cities and even rural areas. But many a time the arts teaching is done in a traditional way of perfecting the art form. Hence it might be far from the goals of 'feeling happy'. The sole goal can be focussed on 'achieving'. Though this might be desirable from the learning point of view and for naturally talented people who want to pursue art as a career, for the larger group this may not be necessary.

It would be useful to conduct regular e.g. once in a year workshop from professional bodies of psychiatrists or clinical psychologist or mental health professionals to conduct training programmes of art teachers with particular relevance to role of arts in mental health and wellbeing. These programmes can bring forth a careful discussion on how traditional art teaching can be modified albeit partially to encourage people attending classes, performances or training for more modern or innovative art forms can be delivered with the goal of nurturing mental wellbeing and or healing.

Co-delivered workshops run in collaboration between mental health professionals and the teacher of art might be another alternative approach to ensure there is the right skills set in the room to deliver to mental health benefits of creating art work.

<u>Tools to measure creative aptitude , creative attitudes and benefits from creative experience</u>

Measuring creativity as agreed by global research till now is a difficult task. But nonetheless it is important from many aspects. An extensive discussion on measuring creativity, different scales available is outside the scope of this guideline. However the following are noteworthy from the focus of this paper.

- Though children and adults need to be encouraged to learn any art form they like ,engage in any form of creative activity, assessment of creative aptitude can help one be persistent with a particular activity and can have increased benefits.

- The assessment can happen over a range of different domains related to creativity such as divergent thinking, humour, aesthetic experience, imagination, innovation, type of activity, creative achievement.
- Structured instruments can not only aid the researcher to assess how beneficial the activity can be for the user but also help one understand whether the user is enjoying the creative activity.

As mentioned art or creativity can be used for a range of purposes but are broadly grouped as when used for health promotion or psycho-social wellbeing or when more specifically used for management or treatment of mental health or physical health conditions. Art based therapies offers benefits for a wide variety of settings including both physical ailments and mental illnesses alike. It is important to bear in mind especially when assessing impact of art and creativity as a treatment intervention that if one takes a narrow disease or symptom focused approach we might not be able to capture some of the benefits art and creativity offers. Art based therapies can be used for enhancement of mental well-being and not limited to treatment of specific diseases. We recommend self-reported quality of life or recovery based scales instead. There are scales, self-reported questionnaires standardized in more than one languages which are freely available for public and academic use on web .[41,42,43,44] When using clinician rated scale global impression scales would be an alternative e.g. the Clinical Global Impressio(CGI). [45,46] Interested readers can refer to these websites .To the best of our knowledge no scales to assess creativity developed in Indian languages are available currently.

Art activities keeping in focus women's mental health and wellbeing

Women's mental health in India has many social dimensions such as domestic violence, teenage pregnancy, gender discrimination and legal barriers to abortion which may pose serious challenges to mental

health. Gender is considered an important factor in mental health and mental illness. Modern women may have conflicting views about patriarchal belief system, orthodox code of conduct for women, marriage deemed as necessary especially for women, practice of dowry, submissive attitude of daughter-in-law in the house and preference for male child. Women's main occupations include motherhood, raising children, cooking and housework.These factors have a significant impact on the prevalence, symptoms, treatment and outcomes of mental disorders among Indian women. Therefore, women's mental health needs to be understood from the perspective of reproductive health, psychopharmacology, psychosocial determinants of mental health and legal issues.

Creative tasks can have a particularly positive impact on women's quality of life. Numerous studies confirm this power of creative art forms. One such study examined the effects of drama-focused therapy on improving self-esteem, quality of life, communication skills, and meaning in life while reducing symptoms of PTSD, depression and anxiety, and gender stereotypes in women who have faced Intimate partner violence.[47] The program combined elements of theatre, psychodrama and theatre of the oppressed. The authors found a statistically significant reduction in depressive symptoms and gender stereotypes. They also observed an increase in these women's meaning in life, reporting that they value their lives more and find more reasons to live. They were also more likely to see positive meaning in some aspects of their daily lives.As part of another project, the Australia Council commissioned the study Australians and the Arts: ‘What do the Arts mean to Australians?’ More than 1,200 participants took part in the study. Women, girls and people from non-English speaking backgrounds were found to have significantly more positive attitudes towards art than men and boys. 80% of respondents said they “feel good when I express myself creatively,” 66% agreed that “art is good for my inner self,” and 66%

love being an artist. Art was also valued for its contribution to national identity and for other intellectual, social and emotional benefits[48,49].

Components of positive mind set changes seen in women who attend art activities

- Set firm goals in life
- Feel way less isolated
- Self analyze
- Relate and respond positively to relationships
- Manage aggression
- Harness their creativity
- Address root cause of their issues faster
- Can distract themselves during stressful situations
- Rediscover their self-esteem

Psychological barriers for women wanting to participate in artistic activities

• I'm not good enough

• I was never good at art at school

• I can't do anything with my hands

• I was not an artistic child

• I am not an artistic person

• I have no artistic expression within me

•I don't think I'm creative because I use a plan

• I have not attended art classes earlier

Ways to overcome barriers to pursue art activities in homemakers

- Keep a fixed time for the activity
- Focus on enjoying the activity rather than fixing a goal
- Short term goals like learning a few lines of a song in one week can be rewarding at the same time enjoyable too
- Select a time of the day when you are not disturbed
- Share the importance of your activity to your quality of life ,in keeping you happy to your family members.
- Join a class which can become a social activity too.
- Try to take part in small performances/shows which can boost your self esteem
- Be persistent in pursuing this activity Use diplomacy while convincing family members to allow you to take up the activity regularly.
- You can change the type of activity to see which suits you the best
- Find an activity which is easy to pursue, less expensive and one which you enjoy
- Wherever possible when you take children for their art classes try joining the same class which can have multiple benefits
    - saving time,
    - what difficulties your child can face,
    - how you can help her/him
    - reduced cost of travel,
    - less pressure on child,
    - increased motivation for the child
    - a sense of feeling young by learning with your child

Ways to find time to include a hobby in working women

- Remember to include some creative activity in your routine
- Organize a club in the office and try small programmes for different occasions
- Maintain your stability others comment
- Utilize travel time to listen to songs/watch short dramas and try to reflect on how you felt and spent that time meaningfully.

Use of art activities to promote wellbeing in Elderly and people with dementia

Current research shows promising results in using artistic interventions to promote well-being and extended lifespan with improved quality of life in the geriatric population. Nowadays, it is common for older people reaching retirement age to return to pursuing interests that they were previously unable to do due to their commitments/work/lack of time. In this section, we will review some of the evidence and practical aspects of using arts interventions with older adults.

Elderly population often complaints of decreased sleep.There has been a study which looked at the effect of music in ICU admitted elderly patients. The causes of sleep disorders can be an underlying illness, unpleasant treatment, psychological stress or the intensive care environment itself. Non-pharmacological interventions such as noise reduction, music therapy, alternative and complementary therapies and social support were studied and recommended to improve sleep in seriously ill elderly people[50].Geriatric population thus can be asked to utilize art activities to aid them with an improved sleep.

In dementia art therapy has been used successfully to increase a sense of wellbeing. Dementia is described as a decline in the ability to remember, think, and perform other cognitive functions. More than 55 million people worldwide suffer from dementia and approximately 10 million new cases of the disease are diagnosed each year.Art therapy, dance or movement therapy, music therapy, and remniscent therapy have been studied as non pharmacologic treatments for Alzheimer's disease. Studies have shown multidisciplinary cognitive rehabilitation in patients with mild Alzheimer's disease to be useful. [,51,52].

One form of cognitive rehabilitation was art therapy. People used memory training, computer-assisted mental stimulation, expressive activities (drawing, verbal expression, writing), physiotherapy and physical training. Improvement was recorded. Participation in arts interventions, including dance, expressive writing, music, theatre, and visual arts, has been studied for its therapeutic and psychological effects. In their study, Richards et al.[53] presented the intervention group with art therapy exercises for one and a half hours. Activities included hat decorating, collage, embossing, painting, ceramics, photography and printmaking. Each week, participants developed an art product based on the instructions. Art therapy has been shown to increase self-esteem by strengthening emotions related to self-esteem or competence. Finally, after the two-month course, participants continued to create artwork themselves, resulting in a greater sense of accomplishment and self-esteem

Caregiving and creative pursuits

Caregiving is an inevitable challenge faced across the world with a large aging population. In India we have moved away from joint family system where caregiving would have been easier to a nuclear family system wherein caregiving is perceived by both the caregiver and the person who is suffering as huge burden. The caregiver issues are seriously neglected by the society and this neglect in turn can hamper the process of caregiving.[54] There is recent wealth of data on the usage of art interventions in caregivers, dyads of caregivers and the elderly people with mental health issues. Let us look at some of them.

The review by Irons JY et al looked at 516 studies and came to some notable conclusions.[52] The qualitative synthesis revealed that the interventions provided nurses with the opportunity to understand, accept and adapt to their identity as

carers. Caregivers viewed personal development, such as learning new skills, positively, valued the opportunity to learn cognitive and behavioral skills, and the opportunity to express their feelings in a safe space was important to them. Creative Group interventions were particularly helpful in building social connections with caregivers and other caregivers. The current review identified all creative interventions focused on dementia carers; This in turn identified evidence gaps regarding creative interventions for informal caregivers with other neurological conditions. There are encouraging preliminary data on music and arts interventions, but little data on other art forms, such as theatre and dance. Creative interventions can be useful to many caregivers and provide a range of psychosocial benefits. The results can be encouraging to pave the way for future research aimed at developing appropriate and creative arts programs and testing their effectiveness using robust tools.

The study by Pinear et al used interpretive phenomenological analysis to examine the importance of participating in a five-week arts and crafts program for caregivers of people with dementia. Eight caregivers participated in the study and four who met the eligibility criteria agreed to be interviewed. Participants felt that the arts group provided a sense of freedom and calm, strengthened identity by promoting success, provided social support through a collective focus on arts and crafts, and increased resilience to caregiving. Some found the 5-week program to be too short. The benefits were related to the security of knowing that loved ones with dementia are close to them and well cared for.[54]

Identified benefits for elders and caregivers

- Creative arts are unique, fun and encourage expression
- A feeling of accomplishment
- Meaningful connection and support between informal carers
- Find common ground and overcome isolation
- Positive impact on dyadic relationships
- The carer is seen in a new light as the person to be cared for
- Roles are forgotten and the feeling of equality is rediscovered

Care-giver respite

1. Take a walk.
2. Work in the garden.
3. Find a class, in person or online.
4. Break the exercise up into manageable time frames. Seek and accept the support of others:
5. Practice pleasant and nurturing activities that bring you joy: (Reading a good book/Play an instrument /pursue an old hobby)

Important Considerations on the Benefits of Art Participation for Older Adults

- Art contributes to communication
- Develop a sense of identity preservation
- Strengthen social networks in communities.
- Art helps create age-friendly communities in which older people can thrive and function.
- Improved quality of life for both carer and the elder.

Family members seeing older relatives perform are also often inspired to do something they have not done before, such as attending more arts performances or taking up an artistic discipline of their own. Creative arts programs create a bond between older adults and caregivers in long-term care facilities. Staff may then see their jobs as a mission to take care of people, not just as employment. The intent of arts and aging programs is to accomplish one or more outcome goals for older adults—all aimed at enhancing quality of life. Community involvement and a support network—are particularly important for older adults, and they are two areas in which the arts have significant impact. Mastery is less important for people with dementia, for whom learning a new technique or topic may be difficult. Concentric circles of influence spread out from the participants to affect family members, professional caregivers, staff, and members of the public. Adult learning, which builds instruction around the

experiences, interests, and goals of adults—is the educational philosophy that underlies effective arts and aging programs for cognitively fit older adults.

Time Slips—a one-session program—uses storytelling to invite contributions from all participants.

(Adapted from art and aging tool kit[55])

1. Facilitators greet participants individually and then show the assembled "storytellers" whimsical, dramatic, provocative photographs.

2. Using open-ended questions, they elicit responses to the images that create a story, which is re-read after every four or five answers to establish momentum and remind the storytellers of what they have created.

3. The telling format involves crediting individuals for their contributions as the tale builds. Non-narrative ogic may be necessary to express the participants' humor, desires, and sometimes sadness.

4. Facilitators record the story to share with staff and families.

Activity sample for Caregivers and elderly people

- Movement warm-up,
- Group storytelling
- Sharing selected stories with the broader community.
- Start with the familiar and move into the unknown.
- Place music or singing first, progress to activities that feature writing or dance. When selecting topics for storytelling, writing, or movement, build trust by guiding newly formed groups in exploring less personal

A trust-building exercise might be designed like this

1. Each elder presents the person to his or her right with an imaginary gift that the giver thinks the recipient would like to receive—an object, an idea, or an emotion.

2. The giver should know exactly what the gift is and try to present it as if it were real, not imaginary.

3. After presenting the gift, the giver explains what it is. The recipient feels accepted, confident, and happy

Yamaha's Clavinova Connection sequence of activities for each session:[55]

1. Arrival song—Played while the facilitator welcomes participants

2. Warm-up—Music, movement, imagery, and awareness

3. Drum circle—Each keyboard simulates a drum kit

4. Improvisation—Pentatonicbased exercises performed with dynamic soundscapes

5. Music insight—A discussion of musical concepts

6. Song of the day—Group and individual playing of a designated song to condition a sense of fulfillment, enthusiasm, and personal accomplishment

7. Mind-body wellness—A Clavinova cool-down that repeats the initial exercise

8. Reflection—A group discussion focused on awareness and progress

9. Farewell song—To inspire a light-hearted spirit in anticipation of the next class.

or join in on the chorus;

Reminiscence -Reminiscence helps older adults make sense of and reconcile life experiences. maintaining self-esteem; reinforcing personal and collective identity; resolving grief .helping to assuage the anxiety of physical mental decline. It is known to stimulate memory function and socialization.[57] It can be just plain fun for older adults, as they recall pleasurable experiences and perhaps even find solace in sharing painful ones. Reminiscence is pertinent to older adults with dementia even if they can't always connect their words or images to the past.

Visual art is a communication tool with which they can tell facilitators, family, and staff about who they are and what they've experienced in life. While reminiscence works well for people in the early stages of dementia who are trying to hang on to memories, it may be too frustrating for those in the middle to late stages of the disease.[56]

Themes that may stimulate participants' memory include:

- Work we have loved,
- Places these feet have walked
- Games these hands played
- Your favorite vacation,
- Unexpected moments of surprise,
- Moments of love, moments of support.
- Senses—sight, touch, hearing, taste, and smell—may invoke memory
- Using fabrics, herbs, photographs, or music.

Try this approach to reminiscence:

1. Ask each participant to shake hands with a partner whom they don't know well, and take the time to notice each other's hand:
2. Are there any rings? Is the hand smooth or rough?
3. Ask questions about your partner's hand:
4. What kind of work have these hands done? Where did that ring come from?
5. Bring the group back together and ask each person to describe how his or her hand feels and any difference in sensation before and after the exercise.
6. Ask each person to share one story about his or her partner.
7. Review the stories for familiar themes and record them for future use

Instructions for facilitators

- Minimize distractions, especially if the participants have dementia.
- Allow for ample spacing between chairs.
- Ensure that participants feel connected to the group and not cramped.
- Make metal folding chairs more comfortable by supplying inexpensive foam cushions.
- Monitor the room temperature, watch for signs of discomfort, and learn how to control the thermostat.
- If participants are too hot or cold, they won't focus.
- Monitor the acoustics and minimize unnecessary noise, but don't limit conversation.
- Participants, particularly those with hearing aids that often amplify background noise, are distracted by sounds that echo around a space without any fabric, padding, or carpet.
- Position participants who have difficulty hearing and seeing at the front of the group or in a place with a good sight line to the conductor, director, or teaching artist
- Use a portable PA system.
- Use as many printed instructions as you can to minimize misunderstanding due to hearing problems.
- Practice your best projection and diction when speaking to a group.
- Repeat directions. Verbal repetition not only helps with memory, but also can make the words clearer.
- Enlarge music scripts

Language tips while conducting art activities in senior citizens

- Never use the word handicapped; the word is disability.
- Never use a disability as an adjective: a writer who is blind, not a blind writer.
- Focus on the person, not the disability.
- Never use special, because this term separates the individual from the group. For example, information is not required regarding the special needs of the group, but needs of the group.
- Never use euphemisms, such as physically challenged or handicapable. These terms are condescending.
- Never use labels: the disabled, the blind, the deaf, A.B.s (able-bodied), T.A.B.s (temporarily able-bodied), or normal

When communicating with frail older adults or those with dementia:

- Face the person when you speak.
- Establish eye contact.
- Use hand gestures (point).
- Speak distinctly, calmly, and softly.
- Use simple sentences.
- Allow ample time for answers.
- Minimize background noises.

- Do not over use the word no; yes or maybe might be adequate.
- Sudden, quick, unexpected movements can be frightening.
- Let the person know the time of day and where they are, and reiterate what is going on every now and then.

The role of art activities in Psycho education

Another important area which needs to be explored is the role of creative art forms in mental health awareness and Psycho education.We also need to create awareness on promoting mental health through fine arts and creativity. Attention of our clientele/general public needs to be drawn about the role of creativity in fostering a sense of wellbeing and in Life style modification.

According to WHO Mental health promotion involves creating an environment, which promotes healthy living and encourages people to adopt healthy lifestyle.[57] Enabling national mental health policies and legal frameworks is essential to effectively manage mental health disorders and provide comprehensive guidance to ensure mental health promotion. This requires a multi-sectoral commitment and a life course approach.[58]

A study in Kerala[59] demonstrated how theatre, storytelling and film-based platforms can be used as a tool to improve mental health literacy. The project showed that theoretically existing knowledge of theatre having potential to help both the actors and audience by providing information about mental illness, challenging stereotypes, reducing stigma, decreasing the sense of isolation, providing role models and instilling hope can be implemented practically. As in Kerala study, we have found that classical dance-music and poetry could be used effectively for mental health literacy.

On the Edge is a mental health education programme designed to support early intervention by increasing knowledge and understanding of early psychosis, reducing the stigma associated with mental health issues and improving awareness of avenues of help.[60] The target audience was young people aged 14–22 years in schools and colleges. An interactive drama programme was developed through collaborative working across psychiatry, applied drama and those with direct experience of psychosis. The project engaged 2500 students in 71 performances that took place in 51 schools and colleges. Quantitative and qualitative evaluation found significant gains. Thirty-one schools developed supportive links with local mental health services. This programme shows the value and effectiveness of delivering health education on early psychosis through the medium of applied drama, and offers a model for a programme that can be incorporated into early intervention services. Qualitative data showed that students believed mental health was an important subject that despite their personal experience was rarely dealt with in schools.

These programmes stand out as a different awareness programmes compared to routine speeches, talks or other health programmes. It might be seen that General public/schools/colleges are initially hesitant to organize this programme for two important reasons. One - they want a straight forward mental health issue- most likely stress management/academic issues /parenting skills; Two - they are scared about the cost of the programme. This barrier can be overcome by a careful discussion using advocacy skills, cost reduction techniques, partnering with key stake holders. It has been said that given the failure of most previous strategies to improve mental health in developing countries over the past 60 years, it is time to take a new approach with renewed vigor. It is important while designing any community awareness programmes with special relevance to mental health issues. The role of fine arts with an entertainment value offers an important advantage since the entertainment is often viewed as universally enjoyable.

In theatre studies it was found that theatre can also spark discussion and personal reflection about mental illness, and decrease stigma. At the same time it can build empathy for people living with mental illness and even encourage activism in others. Sensitization about mental health issues appears possible through the medium of fine arts. Such designs can open dialogues about mental health issues.

Art activities for Psychoeducation and mental health awareness

- Helpful in demonstrating the symptoms of mental illnesses
- Can depict how mental health issues might happen to anyone
- Can give information on what to do and where to turn when it happened more effectively
- Reduce stigma
- Enhance awareness of help and support

Important components of the art activities for psychoeducation programmes

• The realism of the creative play/activity

• The quality of the acting /portrayal

• The emotional power of the performance

• The sense of safety that the production gave to talking about the issues

• The use of different forms of learning to engage students with the message of the programme

Creative art forms in psychoeducation

- For specific mental health disorders as group activity- 10 minutes skits – street palys
- Short songs which are tuned in popular filmy tunes
- Dance drama based on specific mental health issues
- Lecture demonstrations by Artist-Psychiatrists on different art media about various mental health issues

Key Points about Public Awareness

Push your message about the benefits of art programs through public speaking opportunities.

Understand that everyone can and should advocate.

Develop public awareness goals.

While advocating ensure that the audience, message, messenger, and method all fit together.

Identify and think strategically about audiences.

Turn existing rationales and arguments into messages.

Enlist participants whenever possible to be your messengers.

Anticipate that your public awareness efforts will be ongoing and that you must be persistent.

Be imaginative and strategic in developing methods.

Sensitize the media.

Conclusion

We believe there are advantages of using non-verbal communication in addition to conventional methods of psychotherapy is especially important in a multi-linguistic country like India. We often have social workers have been widely and effectively using art-making in their rehabilitation programme for mentally challenged children and in marginalized populations such as destitute, people incarcerated in prisons and under-privileged group of the society. At the

same time, we have relative rich resources comprising trained artists, psychologists, psychiatrists, psychotherapists and educationists especially in urban settings. Unfortunately, in spite of having a sizeable skilled workforce, our mental hospitals, Institutes and clinics do not incorporate art-therapy in their model of care. There is a need to form partnerships between this workforce and the institutions to create multi-disciplinary teams. Teams can take an innovative skill based approach as opposed to profession based structure and may consist of partnerships between arts and psychotherapist or social worker. Recourse allocation is critical and this would involve physical space and material to create art work along with employing professionals. There is little in the form of formal art therapy training in India. Therefore unlike other methods of psychotherapy, art-therapy is sometimes conducted jointly by a trained artist and a competent psychologist or psychotherapist to ensure there is the right 'skill mix' in the room[61]

Thus our 'Take home messages' can be summarized as follows

1.Creativity is unique human attribute which has played very important role not only in advancing the journey of civilization but also taking care of health and mental health needs of people.

2.Newer technologies are extending great help to humanity but at the same time posing a threat to mental musculatures involved creative process by abundance of ease. So, there is a need to engage people, especially younger ones in creative pursuits religiously.

3.We have substantial evidence for the role of creative pursuits not only in prevention of mental illness and promotion of mental health but also therapy and stigma reduction.

4.We must develop strategy for implementation of creative interventions at schools, in families, social centres and health and mental health establishments.

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Article: Invited article for CPG

Title: Developing Resilience and harnessing Emotional Intelligence

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Title: Developing Resilience and harnessing Emotional Intelligence

Abstract

Resilience and emotional intelligence have a strong relationship with each other with often same factors playing a role in their development. Incorporating resilience and emotional intelligence in treatment of psychiatric illnesses will help in improving the prognosis of a patient. Resilience building interventions are usually individualised and help in improving personal resilience, performance in all domains of life and health. Present guideline is based on available evidence and suggested to be used for mental health promotion and for prevention of various mental health conditions.

Key words: Resilience, emotional intelligence, mental health, wellbeing

Introduction-

The concept of mental health was seen through the lens of the presence or absence of mental illness. Later ideas and theories have proved mental health to encompass more aspects. WHO has defined mental health as a state of well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in. In recent times, the concept of positive psychology has focused more on the aspects of mental health beyond recovery from illness such as positive experiences, positive aspects of life like gratitude, love, social relations, humour, and resilience.

Resilience is the ability and the capacity of a person to adapt well in the face of adversity, trauma, tragedy, threats, or even significant sources of stress. It is a dynamic process in which biological, psychological, social, and environmental factors to enable an individual to regulate their mental health despite exposure to adversity at any period of life i.e. resilience can be acquired by anyone anytime[1,2].

Even though resilience can be acquired, many biological and psychosocial factors contribute to it in an individual– either positively or negatively. Amongst these, the psychosocial factors are as follows in table-1[3]

Table-1: Attributing factors for Resilience

Positive attributing factors	Negative attributing factors
1. Secure attachment and bonding	1. Poor perinatal care

in early childhood 2. Intelligence 3. Social skills 4. Good physical health 5. Easily adaptable temperamental traits 6. Socially approachable 7. Appearance and self-awareness 8. Optimism and a sense of humour 9. Productivity 10. Purposeful and organised 11. Compartmentalisation 12. Recreation 13. Cognitive flexibility 14. Active coping	2. Adversities in childhood including abuse 3. Dysfunctional family dynamics 4. Psychopathology in parents 5. Poor schooling 6. Absence of positive role-models/mentors 7. Culture of violence 8. Wars and natural disasters

Biological factors that have a role in contributing to resilience response in a person include following genetic factors such as[4]

a. Neuropeptide Y(NPY) gene
b. CRH receptor 1 (CRHR1) gene, FK506-binding protein 5 gene (FKBP5) – have a role in hypothalamic-pituitary-adrenocortical(HPA) axis
c. Catechol-O-Methyltransferase gene (COMT)
d. Dopamine transporter gene (DAT1), Dopamine receptor genes (DRD2,DRD4) – have an effect on dopaminergic system
e. Promoter region of serotonin transporter gene (5-HTTLPR), Serotonin receptor genes (HTR1A,HTR2C,HTR3A) – play a role in serotonergic system
f. Brain-derived neurotrophic factor gene (BDNF) – has a role in neuroplasticity

Polymorphisms seen in these genes influence resilience via the gene-environment interactions. Apart from neuropeptide Y, HPA axis, serotonergic, dopaminergic and noradrenergic systems, glutamate, GABA, endocannabinoids also have been implicated in stress response and resilience. Epigenetics including functional DNA methylation have also been implicated in the relation between trauma and resilience.

We all know now that any function of the brain more often than not involves many regions. In the same way, it has been found that dysregulated functioning of certain circuits results in low resilience phenotypes- making them more prone to development of psychiatric illnesses. The implicated neural circuits include

i. Mesolimbic dopamine pathway – which is the reward circuit. A highly functional and sturdy reward circuit has been shown to occur in high resilience individuals.
ii. Neural circuit for fear- which involves the limbic system and prefrontal cortex. A circuit that has been processed to have the ability to avoid exaggerated fear responses helps in improving resilience in people.

iii. Neural circuit for social behaviour – which involves the prefrontal cortex, amygdala, nucleus accumbens, and insula. Prosocial adaptive behaviour plays a key role in enhancing resilience of an individual.

There are various factors that influence resilience in an individual and therapies should target these factors during intervention and hence suggested to be kept as we recommend the guidelines.

Emotional intelligence is the ability to monitor feelings-both own and others, to understand and discriminate amongst them, and to use this information to guide one's thoughts and behaviour[5]. It is usually understood and explored through the following domains :

1) emotional perception
2) emotion facilitation
3) understanding of emotions
4) emotional regulation

Emotional intelligence is involved in all aspects of life, and psychological disorders with high scores in emotional intelligence correlating with greater psychological well-being, improved social, occupational, and personal functioning.

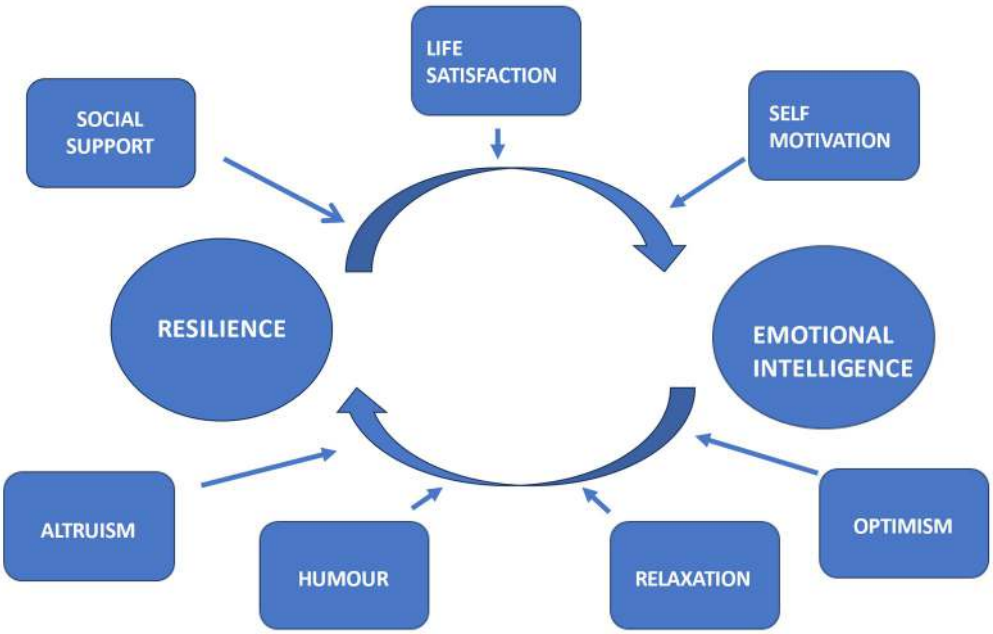
Biologically, anterior insula, anterior cingulate cortex, ventromedial prefrontal cortex has been found to play a role in emotional perception and subjective emotional experience. Along with amygdala, these regions also have a role in recognition and understanding of emotions. Emotional facilitation helps in facilitating thoughts and behaviour through empathy and prosocial behaviour. Ventrolateral prefrontal cortex, insula, and temporo-parietal junction have been found to be involved in this process. Cognitively speaking, theory of mind gives some explanation about how the development of social and emotional abilities happen through childhood and beyond. Lastly, ventrolateral prefrontal cortex, ventromedial prefrontal cortex, and amygdala have various interactions for successful emotional regulation in any individual[6].

<u>Relation between resilience and emotional intelligence-</u>

Resilience and emotional intelligence have been found to be positively correlated with each other. People who have high levels of emotional intelligence perceive themselves to be more resilient, i.e. more capable to cope with adversity and deal with negative experiences. The domains of emotional intelligence also have individual effects on resilience. High levels of emotional perception and facilitation leads to individuals being aware of their emotions in stressful situations and adapting their behaviour and thoughts to communicate in a prosocial manner. Understanding emotions will help in improving empathy. This will help in strengthening social relations and support. Finally, people with good emotional regulation and control are more likely to respond to personal distress with a more positive affect and helpful coping skills. This improves the resilience and helps people to respond to life stresses without succumbing to them. Vice-versa, it has also been found that highly resilient people

actively enhance their positive emotionality through altruism, humour, relaxation and optimism, thus showing that emotional intelligence and resilience have a reciprocal relationship with each other (Figure-1)[7].
Emotional intelligence helps individuals in maintaining optimistic feelings and dealing with difficulties. Emotional intelligent people also have high levels of self-motivation and deeper sense of life satisfaction. Social support, self-motivation, and life satisfaction have been found to have an important medicating influence between emotional intelligence and resilience[8].

Figure-1: Association between Resilience and Emotional intelligence



Review of literature-

Several studies have been done regarding resilience and emotional intelligence in students, war veterans, people in regions of natural and manmade disasters as they have been exposed to either high levels of stress or severe adversity (Table-2).
Most recently, studies have been done with COVID-19 as a backdrop in various populations and their resilience and coping skills.
Sarrionandia et al have done a study in undergraduate students in 2 different countries and found that irrespective of region, students with better resilience and emotional intelligence present with lower perceived stress.

This study highlighted the need for intervention programs that improve both resilience and intelligence could be helpful to mitigate the high amounts of stress faced by the student populations[9].

Pietrzak et al showed surveyed 272 veterans and found that resilience had a role in mediating the association between unit support and development of post-traumatic stress disorder PTSD) and depression and even post deployment social support played a role. Those with lower unit or social support had increased PTSD and depressive symptoms and decreased resilience and poor psychosocial functioning[10].

Evidence often supports the dose-response effect between traumatic exposures and mental health, that is the greater the exposure, the higher the psychological problems. This is seen in all ages. For example, in a study done by Shoshani et al, they focused on adolescents aged between 13-15. In this study with the subject population of 1078, they took an individual's character strengths and virtues as factors for resilience. They found that higher resilience via interpersonal, temperance and transcendence strengths was negatively associated with the development of psychiatric symptoms[11].

COVID-19 presented an unprecedented challenge to the whole of mankind. It presented us with adverse situations and brought many changes to how people live in the face of uncertain future and social isolation. Fugui Li et al studied the effects of sources of social support and resilience on the mental health of different age groups. The study sample was large with the number of subjects being 23192. This study showed that higher resilience was positively correlated with better mental health, and social support had the role of a buffer against the negative impact of low resilience on mental health[12].

However, most of the studies have found that many people who have been exposed to traumatic events do not develop psychiatric disorders or psychological problems. For example, lifetime exposure incidence to trauma in general population can range from 50% to 80%. However, development of psychiatric disorders such as depression, anxiety, and PTSD ranged from 7-15%[13,14]. This shows that even in case of trauma, not everyone will develop an illness and this could be due to various factors amongst which the most predominant one is resilience.

Table-2: Association of resilience with emotional intelligence & other factors

Study	Population	Findings
Sarrionandia et al, 2018	Students	Better resilience and emotional intelligence presented with lower perceived stress
Pietrzak et al, 2009	Veterans	Those with lower social support had increased PTSD and depressive symptoms, decreased resilience, and poorer psychosocial functioning
Shoshani et al, 2016	Adolescents in war-torn area	Higher resilience was negatively associated with development of psychiatric disorders
Fugui Li et al, 2021	General population during COVID-19	Higher resilience was positively correlated with better mental health, and social

		support had the role of a buffer against the negative impact of low resilience on mental health

Association of Resilience in psychiatry-

There is some evidence that people with mental illness might have lower resilience and that higher resilience levels may minimise the illness severity or even prevent development of mental illness.

In bipolar disorder, it has been found that higher resilience levels lead to decreased impulsivity and depressive episodes. In patients with PTSD, it has been found that high levels of resilience correlated to lower levels of development of PTSD. In these two illnesses, there is a reciprocal relationship between impulsivity and resilience. It shows that to develop and enhance resilience is to improve the stability of mental health, especially in these two population subsets[15].

Many studies have been done to understand the importance of role of resilience in the development and maintenance of PTSD. Low resilience levels and prosocial adaptive abilities are seen in people who are later susceptible to development of PTSD after being exposed to trauma. They can also hinder recovery in these individuals[16].

Resilience has been shown to have an attenuating role in suicidal ideation in anxious and depressed people. Positive thinking, social support, and optimism premorbidly have shown to be more in highly resilient people and thus this leads to decreased suicidal ideation and attempts in people[17].

In patients with chronic pain, high resilience has shown to improve their social, occupational, and personal functioning in spite of continued adversity. Conversely, those with low resilience often perceive the pain to be debilitating and affecting their quality of life severely[18].

In children, studies were done in those diagnosed with autism spectrum disorders(ASD) and attention deficit hyperactivity disorders(ADHD) about the effect of resilience. They found that harnessing and enhancing the factors of resilience and emotional intelligence in these populations might play a role in improving prognosis of these conditions[19].

In people with eating disorders, it has been found that highly resilient individuals have a better recovery as compared to those with low resilience levels[20].

How to calculate or assess the concept of resilience and emotional intelligence into day to day clinical practice-

Assessment of scales of resilience in clinical practice :

Resilience is a dynamic process with various factors playing a role in it, an attempt has been made to assess it in a cross-sectional manner by using various scales. the Following scales are suggested.

These scales are will help us to understand how resilient an individual is and what are the factors influencing resilience in that individual, across all ages which will help in planning out interventions.

1) Connor-Davidson resilience scale(CD-RISC)[21] – this is one of the most common scales used in studies
2) Resilience scale[22]
3) Resilience scale for adults(RSA)[23]
4) Brief resilience scale(BRS)[24]
5) Resilience scale for adolescents(READ)[25]
6) Resiliency scales for children and adolescents(RSCA)[26]

These scales usually have items about how a person can adapt to change, how much can they handle being under pressure, whether they can bounce back after a hardship etc.

Scales used for measuring emotional intelligence include

1. Mayer-Salovey-Caruso emotional intelligence test(MSCEIT)[27]
2. Bar-on emotional quotient inventory(EQ-i)[28]

These scales measure an ability of an individual to perceive, understand, and manage and regulate their emotions and also that of others.

Resilience, as mentioned, has been implicated in development and maintenance of an illness. This means it can be used as a resource at any point[29].

In children :

Prior to the development of any illness, resilience training can be used – either as part of primary prevention universally or in selected high risk populations such as those children with childhood adversities or in war-torn areas.
Children need to have the following strengths to become resilient

1. External resources that provide security and safety – these develop trust in others and the ability to make friends
2. Personal attitudes, feelings and beliefs – that will help them bounce back from adversities. These include confidence in self, autonomy, mastery of self etc
3. Social and interpersonal skills

In adolescents :

The rates of emotional and behavioural problems in adolescents are increasing when seen longitudinally. We have to understand the biopsychosocial processes in adolescent development and use them to enhance resilience in them.

Adolescents should acquire and master the following strengths to build resilience

1. Identity of self
2. Ability to prepare for adulthood with expectations for the future

In adults :

Social support has been shown to be one of the most important factors that improve resilience in adults. Mature defences have also shown to be associated with development of resilience. The following strengths need to be inculcated in adults.

1. Internal control
2. Self-esteem
3. Optimism
4. Coping strategies
5. Seeking emotional and social support

In elderly population :

Research in ageing populations shows us how resilience is a process that is both personal and environmental and how it continues through a person's lifespan.

1.
2. Positive attitude
3. Counting one's blessings
4. Spirituality
5. Keeping oneself busy
   All these help in inculcating resilience in the older individual.

Intervention programs focusing on improving resilience need not be isolated in their approach[3]. Instead, they should be incorporated as part of any clinical and public health interventions. As resilience can be facilitated in any age, it should be part of

i. early childhood intervention programs
ii. school and college-based programs
iii. unemployment/workplace programs
iv. neighbourhood centred programs
v. certain activity programs in the geriatric population

Resilient facilitation can be reinforced even through the process of a clinician taking good history and establishing strong rapport. This will help in reinforcing positive attitudes and behaviours and thus improving social support and resilience.

Usual approaches in facilitating resilience include the following three approaches. These have been found to be effective at preventing and mitigating mental illness[15].

1. Harm-reduction approach- which explains resilience as having a role in quick recovery after a time of stress, and this includes biological factors and genetic predispositions.
2. Protection approach- in the way an individual uses certain measures to maintain mental health (i.e., family, school, and friends).
3. Promotion approach- where the individual promptly uses resources to aid in mental health

Most of the current psychotherapeutic approaches have a basis in **resilience** facilitation and can teach us also to **employ emotional intelligence** in daily life and can be used in resilience training in various psychiatric disorders and various age groups as well.

These following therapies use both resilience and emotional intelligence

i. Cognitive behavioural therapy
ii. Mindfulness-based therapy
iii. Problem-solving therapy
iv. Acceptance and commitment therapy

Hence it is recommended that as a guideline where ever there is a need of to use emotional intelligence and to improve resilience in every distressed individual in psychological distress or psychiatric disorders we suggest the above psychotherapies are suggested as add on to other recommended guidelines of Indian psychiatric society.

Methods of suggested guidelines :

Most programs in resilience training resilience in various psychiatric disorders the following methods are used in clinical interview and therapy models and hence Indian psychiatric society guidelines suggest to follow in one to one or group therapy settings the following techniques.

1. Discussions
2. Practical exercises and assignments
3. Role-plays
4. Exposure to mild stresses in a controlled environment
5. Problem solving approaches

It is important to remember that the strengths and weaknesses of each individual are different from the other. The resilience training interventions should not have a blanket approach to the patients but instead individualise the therapy according to their resources and needs. Thus, we suggest the necessary caution and watch needs to be applied in the related psychiatric disorders where we need to improve resilience.

It has also been shown that treatment with antidepressants such as sertraline, fluoxetine, venlafaxine has improved resilience in people suffering from depression and PTSD[30]. So pharmacotherapy will also help in improving the cognitive and social abilities of a person suffering from psychiatric illnesses. Hence as suggested in various Indian psychiatric guidelines the recommended guidelines in various psychiatric disorders need to be followed as recommendation.

Tertiary prevention in psychiatry, improving emotional intelligence and increasing resilience

Apart from having an attenuating role in development of psychiatric illnesses, resilience and emotional intelligence have shown to help in improving the prognosis of the illness

a. through aiding recovery
b. having a preventive role in relapse

Patients recovering from any illness have been found to have some amount of distress – whether due to the precipitating/perpetuating factors of the illness or the impact of the illness on their mental and physical health. Resilience is a part of the personal journey of the patients and it aids in recovery. It consists of

a. creating new personal strengths
b. making use of the social and emotional environment and support
c. identifying and expanding positive emotions and beliefs
d. inculcating helpful coping skills even in the face of adversity[31]

Conclusions:

Resilience and emotional intelligence have a strong relationship with each other with often same factors playing a role in their development. Incorporating resilience and emotional intelligence in treatment of psychiatric illnesses will help in improving the prognosis of a patient. Resilience interventions are usually individualised and target different competencies and resources of an individual. These interventions help in improving personal resilience, performance in all domains of life and finally mental health. This guideline is based on available evidence and suggested to be used in various above-mentioned conditions. Likewise, the increasing importance of both emotional intelligence improvement and increasing resilience we through Indian psychiatric society guidelines suggest as can further be considered as new emerging evidence in other psychiatric disorders.

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Clinical Practice Guidelines for promoting Mental health and well-being of older adults: A Special focus on strategies for coping with social isolation and loneliness

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Clinical Practice Guidelines for promoting Mental health and well-being of older adults: A Special focus on strategies for coping with social isolation and loneliness

Abstract

Rising proportion of older adult population in India, will need preparedness to promote the physical, mental and social well-being. Social isolation and loneliness are important risk factors for major mental health conditions in older adults like depression and dementia. Interventions to reduce social isolation and loneliness may be helpful in preventing mental health problems as well as promoting mental health and well-being of older people. This article aims to explore and discuss various strategies to manage the social isolation and loneliness, for promoting mental health and well-being in older adults.

Introduction

The focus of mental health care is undergoing a paradigm shift over the past few decades with emphasis on promoting mental health and well-being apart from the treatment and care of persons with mental disorders. Recognition of mental health conditions as a public health problem, the development of community-based interventions and the acceptance of a public health approach towards mental health care has contributed to this transformation. Public health model for mental health care includes the complete spectrum of mental health interventions ranging from prevention, promotion, early diagnosis, intervention for acute care, maintaining treatment and support as part of chronic care and rehabilitation. Mental health care in older adults require a public health approach with the focus on promoting the mental health and well-being through a comprehensive and multi-sectoral intervention[1]. The mental health problems in older adults have several biological and psychosocial determinants including the important factors such as social isolation and loneliness[2].

This clinical practice guidelines will focus on the interventions to promote mental health and well-being of older adults. The basic concepts related to mental health and well-being are addressed in the initial article of this supplement. Some of the issues relevant for mental health and well-being in older adults such as interventions to promote mental well-being in those with medical comorbidity are addressed as a separate article in this supplement. These issues will be addressed briefly in this article. The scope of this clinical practice guideline will predominantly include the interventions that are likely to be implemented through the health system in general with specific focus on the role of mental health care services.

These interventions will be relevant for the health professionals from general health care as well as those from the multi-disciplinary fields related to mental health. Promoting mental health and well-being in older adults requires a multi-sectoral approach through the involvement of services from the departments of health, social care, finance, revenue, transport, housing, police, Skill development, Labour, Urban development, Rural development, non-governmental organizations etc. The role of Psychiatrist in these aspects will include the promotion of advocacy, contribution to the organization of these services and promoting the access to these interventions.

Mental Health and Well-being in older adults

The biological and psychosocial factors influencing mental health and well-being of older adults aged 60 years and above include specific factors relevant for this age group in addition to the general factors influencing mental health across the life span.

Table 1: Recent understanding of Mental health and Well-being

• Ensuring good mental health is considered as a human right • Mental health is not just restricted to the absence of mental disorders • Good mental health should enable adequate coping with usual stressors in life • Ability to make decisions, maintain relationships and contribute

Table 2: Factors important for mental health and well-being in older adults

• Social Isolation • Loneliness • Mental health disorders • Physical health conditions • Frailty • Retirement • Bereavement • Hearing impairment • Vision impairment • Family support	• Ageism • Elder abuse • Age friendly environment • Health care • Social care • Financial stressors and Poverty • Old age dependency • Active engagement and sense of purpose • Spirituality • Resilience

Population ageing and mental health

The increase in life expectancy and decline in the fertility rate has contributed to the increase in the proportion of older adults aged 60 years and above globally. The decline in the proportion of younger population along with the increase in the population of older adults contribute to population ageing. This demographic change is occurring at a faster rate in low- and middle-income countries like India. Many European and North American countries have taken more than 50 to 100 years for the increase in the proportion of older adults from 10% to 20%[3]. In India this change is projected to happen rapidly over 20 to 30 years. Hence, the economic development in India during this period of demographic transition is likely to be inadequate to provide adequate health and social care support required to ensure the mental health and well-being of older adults equivalent to the standards in some of the developed countries.

Table 3: Challenges due to population ageing

• Increase in prevalence of depression, anxiety, dementia and other mental disorders • Increase in old age dependency • Decline in family and social support • Increase in caregiver burden

- Increase in the prevalence of disability, need for social care and related economic cost
- Increase in prevalence of elder abuse
- Increase in the prevalence of chronic medical disorders
- Increase in older adults living alone

Life course perspective for mental health and well-being in older adults

The determinants for mental health and well-being in older adults is not restricted only to the old age[4]. It extends over the complete lifespan. This understanding is essential to focus on promoting the interventions across the lifespan. Even if the interventions are initiated at a later age, it will be helpful to address some of the risk factors and contribute to the promotion of mental health and well-being. However, it is preferable to start these interventions as early as possible.

Table 4: Factors promoting mental health and well-being of older adults over the life span

Good education Optimal Nutrition Regular Physical exercise Avoiding Nicotine use Avoiding Alcohol use	Maintaining good physical and mental health in younger age Minimizing exposure to adverse environment, pollution Good Interpersonal relationship with family and friends Financial planning and savings for supporting retirement Learning hobbies

Promoting well-being across the spectrum of intrinsic capacity and functioning

Intrinsic capacity refers to the composite of physical and mental capacity of an individual[5]. Ageing is associated with decline in intrinsic capacity. Old age is often considered synonymous with poor health due to

significant limitation in physical and mental capacity contributing to dependency on working adult population. However, there is significant heterogeneity and diversity in the profile of intrinsic capacity across the spectrum of older adults[6]. One third of older adults have preserved intrinsic capacity with adequate functioning. One third of older adults in the middle of the spectrum may have decline in capacity but they may have preserved functioning with appropriate care and treatment for the physical and mental health issues. The older adults in the lower third of the spectrum have significant loss of capacity due to decline in physical or mental health. They may have health conditions like dementia and stroke associated with significant disability. Promoting the well-being and healthy ageing is applicable to all the older adults in the complete spectrum of intrinsic capacity and functioning. The nature of the interventions and the requirement of the environmental support will vary according to the level of intrinsic capacity and functioning.

Table 5: Approach to interventions for promoting well-being based on the level of intrinsic capacity

Stage of intrinsic capacity	**Target for interventions**
No decline in intrinsic capacity	Health promotion and Prevention of chronic health conditions
Some decline in intrinsic capacity	Stabilization of the intrinsic capacity through control of physical and mental health conditions. Prevention of decline in functioning and disability
Significant loss of intrinsic capacity	Supportive interventions to limit the disability and improve functioning through the environment support. Rehabilitation and Palliative care

Target group for interventions to promote mental health and well-being in older adults

The predominant target group for the intervention will be older adults as their participation and involvement is very important for the success of any intervention to promote mental health and well-being in older adults. However, the mental health and well-being of older adults is influenced by several factors that extend beyond the older adults themselves.

Some of the important stakeholders determining the mental health and well-being of older adults include family members, caregivers, neighborhood environment etc. Family support and the role of age friendly environment is very important in promoting the well-being and healthy ageing[7]. Older adults with severe sensory impairment and mental disability may not be able to have active engagement in the interventions to promote well-being. In this context, interventions with other stakeholders can be very helpful.

Table 6: Examples of interventions with different stakeholders to promote mental health and well-being in older adults

Target group	Examples of interventions
Older adults	Self-care interventions Cognitive training Physical exercise Psychotherapy
Family caregivers	Psychoeducation Family therapy Caregiver training Support group for caregivers Prevention of elder abuse
Professional caregivers	Stress management for caregivers Training of caregivers in institutional care
School children	Promoting Intergenerational bonding

Professionals in health and social care	Person centered care Integrated care for older people Training in geriatric mental health care
Community	Age friendly environment Reduction of ageism Elder abuse

Task sharing approach

Older adult population is growing rapidly across the globe as well as in India due to the increase in life expectancy, reduction in mortality and improvement in the health system. The population of older adults aged 60 years and above in India is more than 13 crores . Significant proportion of the population seeking health care across all the levels of health system and those living in institutional care are older adults. Specialized workforce for the care of older adults is very limited even in developed countries. It will be very difficult to implement interventions for promoting mental health and well-being in older adults only through the professional workforce. Task sharing approach by training other stakeholders including lay persons involved in the care of older adults is an important strategy to address the shortage of specialized workforce[1]. Collaborative care interventions using the task sharing approach has been implemented in the primary care for the management and prevention of depression, suicide risk etc[8]. Task sharing approach is essential for scaling up the interventions for promoting mental health and well-being in older adults.

Technology assisted interventions

Use of technology is emerging as an important strategy for effective implementation and scaling up of services to promote mental health and well-being[9]. It is useful to minimize the human resource requirement and improving the access for interventions to those having difficulty due

to limitations in mobility, lack of access to safe transport etc. Restrictions for personal contact during COVID-19 pandemic contributed to the growth of acceptance of technology assisted interventions. Many interventions to promote mental health and well-being in older adults have been implemented with the assistance of technology. Older adult population have several challenges for the use of technology assisted interventions. Limitations in literacy, familiarity with the use of technology, sensory impairment etc are barriers for utilizing technology assisted interventions. Older adults can improve in digital literacy with provision of training and support[10]. Tele-mental health services have gained importance with the launching of 'National Tele-mental health programme (TELE-MANAS)" in India. It is essential to use this effectively for the older adult population also.

Individual Vs Group Interventions:

Interventions to promote mental health and well-being in older adults have been delivered individually or as a group intervention to patients, caregivers or other stakeholders[11]. Both these approaches have specific advantages or disadvantages. Individual interventions will be helpful for facilitating a personalized care plan. It will be useful in outpatient settings with significant heterogeneity in the profile of patients. However, individual interventions are more resource intensive and challenging to ensure access to a large number of patients.

Group interventions are more feasible in institutional settings like day care or residential care. It is also likely to be more cost effective. Group interventions provide the opportunity for learning from the experience of peer group. The design of the group intervention itself provides opportunity to address the issue of social isolation.

Public health approach to promote mental health and well-being in older adults

Mental health issues in older adults is an important public health problem requiring a systematic intervention using a public health approach[12].

Promoting awareness about mental health and well-being of older adults among all the stakeholders is essential. Ageism, mentalism and ableism are important biases contributing to the neglect of this issue[13]. Many older adults, family caregivers as well as health professionals consider mental health issues in older adults as normal for ageing and do not seek help.

Public health systems at the level of Health and Wellness Centres, Primary health centres have an important role in promoting mental health and well-being as they have closer access to the community. Public health programs like National Program for Health care of Elderly (NPHCE), National Mental Health Program (NMHP), National Program for the control of Non-Communicable diseases, National Palliative Care Program etc have an important role in the promotion of mental health and well-being in older adults[14].

Social isolation and Loneliness:

Social isolation is the lack of adequate number of contacts with other individuals either in person or through other means. Loneliness is the perceived emotional state regarding the adequacy of interpersonal contact. Some of the Individuals having social isolation may not perceive loneliness. Individuals having multiple social relationships within the family and outside may still have perceived loneliness if they are not satisfied with the level of relationship[15]. Older adults have increased vulnerability for both social isolation and loneliness. More than 50% older adults are reported to have social isolation. One third of older adults are reported to have significant loneliness. Social isolation and loneliness are important factors influencing the mental health and well-being of older adults[16].

Loneliness is a complex phenomenon that extends beyond the mere sensation of solitude. It encompasses a personal perception of social detachment or an absence of significant interpersonal relationships. The

state of experiencing prolonged loneliness can result in a range of adverse outcomes, such as depression, anxiety, cognitive decline, heightened susceptibility to chronic ailments, general decline in the standard of living and increased risk for mortality. Further, the management of loneliness is closely intertwined with the mental health and well-being of elderly individuals[16]. The psychological, emotional, and physical well-being of older adults can be significantly influenced by loneliness. To adequately tackle and mitigate loneliness among the elderly population, it is imperative to comprehend its consequences on their psychological state and holistic welfare. Hence, it is imperative to prioritize strategies to foster psychological well-being and promote a state of being comfortable, healthy, and happy, while simultaneously tackling the problem of social isolation. The following are various strategies that can be employed to manage loneliness in older adults, with the ultimate goal of enhancing their overall well-being and mental health.

Table 7: Strategies to manage issues around loneliness

Strategies to manage issues around loneliness
• Social support • Develop social bonds • Strengthen Networking • Accessible, affordable mental health resources and facilities • Ensure involvement and participation in meaningful and fulfilling activities • Develop an inclusive and supportive (age friendly) environment • Supporting caregivers

Social support: The establishment of a robust social support system is crucial in addressing feelings of loneliness. Seniors can engage in various activities to sustain their social networks, including upholding pre-existing relationships with loved ones, cultivating fresh connections through social

events, and taking part in community initiatives tailored to their interest. A dependable and empathetic support network can offer psychological solace, camaraderie, and a feeling of inclusion.

Develop social bonds: Facilitating significant social and interpersonal associations can serve as a strategy to mitigate the effects of social isolation. Facilitating social interaction and bonding among elderly individuals is crucial, and can be achieved through various means such as joining clubs or interest groups, volunteering, or participating in shared hobbies. Significant associations offer a feeling of direction, comprehension, and the chance to exchange experiences with individuals who share similar interests.

Strengthen Networking: The integration of technology in communication can serve as a beneficial mechanism in mitigating feelings of loneliness. Instructing senior citizens on the operation of smartphones, computers, and social media applications has the potential to facilitate their ability to maintain social connections with loved ones, despite geographical separation. The utilization of video conferencing, messaging applications, and social media platforms can facilitate consistent communication, mitigate sentiments of seclusion, and foster engagement in online communities.

Accessible, affordable mental health resources and facilities: The provision of mental health support is of paramount importance in addressing the mental health requirements of the elderly population. The experience of loneliness has the potential to play a role in the onset or escalation of various mental health disorders, including but not limited to depression and anxiety. Facilitating access to mental health resources, such as counseling or therapy, can furnish assistance, direction, and techniques for coping with loneliness and its related emotional difficulties.

Ensure involvement and participation in meaningful and fulfilling activities: Encouraging participation in meaningful and fulfilling activities has been shown to mitigate feelings of loneliness. It is advisable to motivate senior citizens to engage in hobbies, pursuits, and undertakings that elicit pleasure and a feeling of achievement. This may

encompass artistic pursuits, physical activities, scholarly endeavors, or participation in community undertakings. Participating in stimulating activities has the potential to cultivate a sense of direction, enhance emotional well-being, and facilitate social engagement.

Develop an inclusive and supportive (age friendly) environment: Establishing an inclusive and supportive environment is a crucial factor in promoting the mental health and overall well-being of elderly individuals within their home and community setting. This may entail the implementation of measures to guarantee the availability of community areas that are easily reachable, advocating for initiatives that cater to the needs of older adults, and furnishing various modes of transportation. Moreover, promoting intergenerational linkages by stimulating engagements with younger cohorts via mentorship initiatives or intergenerational events can counteract sentiments of seclusion and solitude.

Supporting caregivers: The provision of support to carers is essential in promoting the mental health and overall well-being of older adults. Ensuring that carers are equipped with sufficient resources, education, and support is crucial in enabling them to effectively tackle the issue of loneliness among older adults. The aforementioned services encompass respite care, support groups, and communication skills training, which are aimed at effectively addressing emotional needs.

The provision of an inclusive environment and system can aid in the effect ive management of loneliness among the elderly population. To effectively manage and address loneliness among the elderly, it is necessary to adopt a comprehensive approach that takes into account various aspects such as social, emotional, and environmental factors. The mental well-being and overall quality of life for elderly individuals can be improved through the implementation of strategies that prioritize mental health support, promote meaningful engagement, and foster social connections.

Retirement and Volunteering initiatives

Countries like India has a fixed age for retirement in most of the formal employment positions. Many older adults are healthy after the usual retirement age at 60 years and they have a further life expectancy of around 20 years. Older adults with adequate financial protection during retirement may not require gainful employment after retirement. Individuals engaged in agricultural work, business and other self-employment may not have specific retirement age. But they may discontinue regular work due to physical and mental health issues or frailty. Ensuring a meaningful engagement for older adults in the post-retirement period has an important role in promoting mental health and well-being. Volunteering initiatives across many areas have expanded significantly through many Non-Governmental organizations. Older adults participating in volunteering initiatives for healthy ageing will enable peer support interventions. Participation in any volunteering activity of their interest will be helpful to reduce social isolation and loneliness and promote well-being. Some of the Government and Non-Government organizations have initiated regular and periodic educational sessions for retirement planning including the aspects of mental health and well-being.

Hearing and Vision impairment

Older adults have high prevalence of hearing and vision impairment. Awareness about treatable cause of vision impairment like cataract has improved significantly and services to treat the vision impairment has expanded significantly over the last few decades. In contrast to this most of the hearing impairment in older adults remain undiagnosed and untreated. High level of stigma, difficulty in affording good quality hearing aids, low level of awareness are some of factors contributing to this. Hearing and vision impairment have significant influence on social isolation, loneliness and poor quality of life with adverse impact on the mental health and well-being of the older adults.

Stress management

Older adults are vulnerable to be exposed to multiple stressors that are common in old age. Maintaining mental health and well-being requires the older adults to have adequate coping skills to manage these stressors. Common stressors faced by older adults include bereavement, diagnosis of health conditions, retirement, financial stressors due to catastrophic health expenditures, disability etc . Many older adults are resilient and manage these stressors effectively without developing decompensation in their mental health. However, significant proportion of older adults develop mental health issues related to these stressors. Promoting effective stress management through supportive psychosocial interventions and life style interventions like exercise, Yoga therapy etc are helpful.

Integrated health care for older adults

Older adults have high prevalence of chronic physical health conditions like hypertension, diabetes, heart disease, stroke etc. They also have high prevalence of depression, anxiety, cognitive impairment, sleep disorders, substance abuse etc. Presence of multiple physical and mental health conditions including frailty is common in older adults. Provision of integrated health care close to community at the level of primary health care is required to improve the access to health care, reduce the treatment gap and promote healthy ageing .

Role of non-pharmacological interventions and reduction of iatrogenic effects

Older adults with physical and mental health conditions are often exposed to polypharmacy contributing to significant risk for drug interactions and iatrogenic adverse effects. Older adults are sensitive to medications and have high risk for drug induced adverse effects even with therapeutic dose of medications due to pharmacodynamic and pharmacokinetic changes. There is a requirement of effective use of non-pharmacological interventions like psychotherapy, psychosocial interventions, life style interventions for those with milder mental health issues and those who

are not responding to pharmacotherapy alone . Regular monitoring of adverse effects is essential to limit any adverse consequences of medications on mental health and well-being of older adults.

AYUSH interventions

Many older adults seek treatment from traditional systems of medicine like Ayurveda, Yoga, Unani, Siddha and Homeopathy. Government of India has advocated integrated delivery of AYUSH and allopathic health services as part of the integrated health services. Yoga therapy has important role in promoting mental health and well-being as it has shown effectiveness in the treatment of depression, anxiety, insomnia etc

Health and Wellness centres

Government of India has introduced the Ayushman Bharat Initiative with the development of ‘Health and Wellness Centres’ as an important component. These centres in the primary health system envisages provision of integrated health care with significant emphasis on the component of preventive and promotive interventions to improve the mental health and well-being. Older adults will be one of the important beneficiaries of this initiative as services for non-communicable diseases and life style interventions to promote mental health and well-being will be available in these centres. Availability of group intervention sessions to promote awareness, physical activity and Yoga therapy will be helpful to reduce social isolation and loneliness in rural areas.

Social care services

Older adults with chronic conditions like Stroke, Dementia, Parkinson’s disease, frailty may have significant physical and mental disability requiring assistance for daily activities. Complete range of social care services including home-based care, day care, residential long term care and palliative care services are required to promote mental health and well-being of older adults with significant disability. Many of these services are not available and accessible easily to older adults. Development of

these services to cater to the needs older adults from low income group is essential to promote inclusive and equitable services for promoting mental health and well-being. Training in geriatric mental health and dementia care is essential for caregivers involved in providing social care services. Guidance for accessing welfare benefits through disability certification is also likely to enhance the well-being of the older adults with disability.

Advocacy

Health professionals as well as other individuals with interest to promote mental health and well-being of older adults have the responsibility to promote advocacy on this issue. Advocacy on this issue with Government as well as the Non-Governmental organizations will be helpful to promote adequate human resources and services in this field. Promoting awareness about legal support available through 'The Maintenance and Welfare of Parents and Senior Citizens Act, 2007' and guidance to access 'Elderline' services (National Help line for elderly 14567) can promote the safety and well-being of older adults.

Spirituality and resilience

Many older adults engage in spiritual activities to cope up with significant physical and mental health challenges and promote resilience. Despite the decline in physical and mental capacity with ageing, older adults are shown to have more resilience and they are able to face the adversities using the wisdom and resilience. Recent studies have demonstrated that cognitive and behavioural interventions can promote wisdom and resilience in older adults enhancing the scope for positive and healthy ageing.

Conclusion

Promoting mental health and well-being in older adults is gaining public health importance due to the population ageing and the rapid increase in the prevalence of mental health problems in this population. Social

isolation and loneliness are important factors contributing to the adverse impact on the mental health and well-being in older adults. Public health approach to address this issue requires multi-sectoral intervention. Health professionals including those working in the field of mental health have the responsibility to promote awareness, identify mental health conditions early and implement comprehensive intervention towards healthy ageing. The entire spectrum of intervention including prevention, promotion, acute care, chronic care, rehabilitation, and palliative care are required. Personalizing the intervention to promote person centered care will be preferable to promote the mental health and well-being of older adults. Several evidenced based interventions are available but there is requirement for scaling up the implementation and developing more evidence through implementation research.

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Mental Health and Well-Being in Patients with Chronic Medical Illnesses

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Mental Health and Well-Being in Patients with Chronic Medical Illnesses

There is no specific or formal definition of chronic medical illnesses. Some of the authors have attempted to give an operational description of chronic medical conditions as conditions needing ongoing management over an extended period and include a broad range of conditions such as cardiac diseases, malignancies, endocrine/metabolic diseases, stroke, chronic hepatic diseases, chronic renal diseases, chronic respiratory diseases, certain infectious diseases, genetic disorders and other health issues resulting in disability/impairment (World Health Organization, 2005). Chronic medical conditions are highly prevalent, especially among older adults, with many having more than one chronic ones. This has led to the development of the concept of multimorbidity, defined as multiple medical conditions in a single person (Academy of Medical Sciences, 2018). Regarding several chronic states, some authors define multimorbidity as two or more, whereas others specify it as the presence of 3 or more chronic diseases (de Melo et al., 2019; Nguyen et al., 2019).

Some attempt has also been made to define the word chronic in the context of multimorbidity. It is understood as the presence of a permanent condition that is associated with irreversible pathological changes in the body organs and systems, requires long-term supervision, observation, and care, is associated with disability/impairment, and requires special training for the patient's rehabilitation (de Melo et al., 2019). Some authors define 'chronic' as persistent medical conditions, which are of extended duration (often lifelong), with a higher probability of recurrence, and there is marked difficulty in ameliorating or curing them (Steiner et al., 2020). Some authors prefer to use the term long-term conditions instead of chronic and define these as conditions that cannot be cured but can be controlled with medications and other measures (Yarnall et al., 2017).

In terms of prevalence, data from the United States suggests that about one-fourth of the people suffer from one or more chronic conditions, and the prevalence figures increase to 50% among those aged 45-65 years and go up to as high as 81% among those aged more than 65 years (Hajat et al., 2018). An available review of the literature of community-based studies reports the pooled prevalence of multimorbidity to be 33.1%, with a significantly higher prevalence in high-income countries (37.9%), than that in low- and middle-income countries (29.7%) (Nguyen et al., 2019). Data from India suggest that the prevalence of multimorbidity among older adults is 30.7% (Mini et al., 2017). Some of the studies have attempted to evaluate the incidence of multimorbidity, and a study that assessed the 3-year incidence of multimorbidity (defined as the development of $\geq$2 chronic diseases) among those who had no chronic condition to start with reported an incidence rate of 33.6%. The incidence rate among those with one disease at the baseline was 66.4%, amounting to an incidence rate of 12.6 and 32.9/100 person-years for those without any condition and those with one illness at baseline, respectively (Melis et al., 2014).

Irrespective of the etiology and the underlying pathological changes associated with specific chronic or long-term medical conditions, most persons suffering from these conditions go through similar experiences and challenges (Steiner et al., 2020). Nearly half of the persons with chronic illnesses report functional limitations and have poor self-reported health (Benner, 1994). Additionally, many persons with chronic physical diseases experience mental health disorders (such as depression and anxiety), other mental health issues such as stress, loneliness, social isolation, etc., and social issues such as stigma, poverty, financial distress, unemployment, etc.

Because cure is not possible in chronic medical diseases or disorders, in recent times, emphasis has been on improving these patients' well-being and quality of life. In this regard, understanding these concepts, including the concept of health, is essential.

Health and Health Promotion

Health should not be understood merely as the absence of disease. World Health Organization (WHO) defines health as *"a state of complete physical, mental and social well-being, not merely the absence of disease"* (WHO, 2020). Health should be viewed as a tool that enables individuals to achieve their goals, meet their requirements, and adapt to their surroundings in order to have long, fulfilling lives. It enables a person to further their development in the social, economic, and personal domains essential for well-being. Health is influenced by personal, environmental and social resources. Individual health resources include physical activity, healthy dietary habits, good social connections and social ties, resilience, positive emotions, and autonomy. The environmental and social resources influencing health include peace, economic security, a stable ecosystem, and safe housing. In this context, health promotion is understood as a process that enables a person to improve control over their life to improve their health. Health promotion activities aim to strengthen individual, environmental, and social resources that can finally enhance well-being.

Conceptual Understanding of Well-being

The concept of well-being has been understood from different perspectives, and it is broadly understood as *hedonic well-being* (HWB) and *eudaimonic well-being* (EWB). The HWB, or subjective well-being, is an emotional and cognitive self-evaluation of life, and it consists of frequent pleasant feelings, infrequent unpleasant feelings, and overall judgment of whether life is satisfying. In contrast, EWB considers particular needs or qualities of paramount importance for one's psychological growth and development, and fulfilling these needs enables one to attain their full potential (Tov, 2018). EWB is rooted in pursuing goals and activities consistent with one's values and identity (Tov, 2018). Ryff (1989) listed six key features that indicate that a person is functioning well. These include the maturity to be guided by internal standards (autonomy), the capability to trust and love others (positive relations), the ability to manage external stressors and leverage on opportunities (environmental mastery), having a positive attitude toward self (self-acceptance), having essential aims and goals in life (purpose in life), and accepting new challenges in life for personal growth (Ryff, 1989). Besides the conceptualization of well-being as HBW and EWB, other authors have included the concepts of optimism and flourishing (one such model is known as PERMA: positive emotion, engagement (flow), (positive) relationships, meaning, and achievement) (Tov, 2018).

Among the various concepts of well-being, HWB has received significant research attention. HWB comprise affective and cognitive component. A person is considered to have high affective well-being when their experience of pleasant feelings exceeds the unpleasant feelings. The assessment of affective well-being accordingly focuses on assessing various emotions, such as happiness, joy, sadness, contentment, anger, worry, etc. However, it is crucial to understand the importance of frequency of affective well-being rather than the intensity of affective well-being because people who experience more intense positive emotions also experience more negative ones. On the other hand, those who experience a higher frequency of positive emotions experience lower negative emotions and resultantly have more positive emotions and possibly higher satisfaction. Cognitive well-being is the self-evaluation of own life compared to an ideal life. People with high cognitive well-being usually evaluate their life goals, desires, and

standards to be primarily met in their current situation. Evaluating life satisfaction as part of cognitive well-being can also include satisfaction in specific areas of life, such as work, family, and health (Tov, 2018). Generally, there is a positive correlation between affective and cognitive well-being, but both concepts are mutually exclusive (Tov, 2018). Regarding affective well-being, data suggest that negative or unpleasant emotions are associated with a higher risk of health issues such as coronary artery disease and poor immune functioning over the long run. On the other hand, higher pleasant emotions are associated with healthy behavior, better immune functioning, and faster recovery after a cardiac event (Tov, 2018). Cognitive well-being reflects the person's judgment about one's life and satisfaction in specific domains of life. The evaluation is based on comparing one's current state with that of a desirable state of affairs. Accordingly, when the present circumstances exceed the desired state, a person has positive cognitive well-being, which could be global satisfaction or domain specific such as work, health, and relationships. Cognitive well-being is further understood to be determined by distal or proximal factors. Accordingly, this is described as a top-down or bottom-up model of cognitive well-being. According to the bottom-up model, life satisfaction is determined by evaluating satisfaction in various domains of life (such as work, relationships, and health) and cultural factors. As per the top-down model, personality traits determine life satisfaction, influencing domain-specific satisfaction (Tov, 2018).

Research involving patients with various physical health conditions suggests that positive affect has a positive effect, whereas negative affect has a detrimental impact on the outcome of the health conditions (Tov, 2018).

Relationship of health, illness, and well-being: Based on these concepts, WHO states that "well-being exists in two dimensions, subjective and objective. It consists of an individual's experience of their life as well as a comparison of life circumstances with social norms and values" (WHO, 2012). Health, education, employment, interpersonal connections, built and natural surroundings, security, civic involvement and governance, housing, and work-life balance are all aspects of daily living that might affect well-being. Subjective experiences include overall well-being, psychological functioning, and affective states. Regarding health, it is crucial to understand that physical and mental health influence well-being and vice-versa. However, it is essential to understand that mental illness and well-being are independent dimensions. People with mental disorders can have a high level of well-being, and it is also possible that those without mental disorders can also have a low level of well-being (Weich et al., 2011). It is also suggested that good health is associated with high life satisfaction (Haller & Hadler, 2006). There is also support for the association of well-being with self-perceived health, longevity, healthy behaviors, mental and physical illnesses, social connectedness, productivity, and other factors in the physical and social environment (Diener & Seligman, 2004; Lyubomirsky et al., 2005).

Recently, authors have attempted to define well-being per the definition of health and describe three core components of well-being. These include physical well-being (i.e., a sense of pleasure derived from the fulfillment of physical needs and the comfort that one derives from the quality of bodily functioning and having a feeling that one has enough energy to meet their daily needs), mental well-being (this includes personal experience of happiness and having positive feelings of the fulfillment of the psychological needs), and social well-being (reflects persons positive social connections, a sense of harmony and integration into the society). Additionally, these authors suggest two additional domains of well-being in the form of spiritual well-being (that includes a sense of serenity and joy that one derives from the gratification of existential and spiritual needs)

and general well-being (which is considered as a balance of the other four domains of well-being) (Bonacchi et al., 2021).
Overall, well-being connects mental (mind) and physical (body) health and provides a holistic model for preventing diseases and promoting health (Table-1).

Table-1: Basic Facts About Well-being and its Relation to Health

- Well-being is a multidimensional
- Well-being has two distinct entities: subjective well-being and objective well-being
- Positive emotions are central to the perception of subjective well-being
- Well-being influences health, and health also affects well-being
- Good health is associated with high life satisfaction and resultant high well-being
- Better well-being is associated with decreased risk of disease, illness, and injury
- Better well-being is associated with better immune functioning, faster recovery, and increased longevity
- Better well-being is associated with higher productivity at work
- Mental illness and well-being are independent dimensions
- People with mental disorders can have high levels of well-being, and it is also possible that those without mental disorders can also have low levels of well-being

Measurement of Well-being: Different instruments have been developed to assess well-being over the years. As well-being is subjective, most of the instruments used to evaluate well-being are self-reported. The length of these instruments varies from a single-item global life satisfaction question to multiple items scales assessing different components of well-being. Some of the available scales are listed in Table-2. Among all these scales WHO-5 Well-Being Index is possibly the only scale available in about 30 languages, although not in any of the Indian Languages.

Table-2: Scales for Assessment of Well-being

Name of the scale	Number of items	Domains
WHO-5 Well-Being Index	Five items questionnaire It is suitable for children aged nine and above	No specific domains
Psychological well-being scale (Ryff et al., 1989; 2010)	42 items version 18 items version	Measures well-being and happiness in 6 domains, i.e., autonomy, environmental mastery, personal growth, positive relation with others, purpose in life, and self-acceptance
BBC subjective well-being scale (Priesack & Alcock, 2015)	24-item self-report questionnaire	Five domains of well-being in this scale include Goal Pursuit, Life Satisfaction, Positive Affect, Quality of Life, and Sense of Meaning.
Well-being Numerical Rating Scales (WB-NRSs) (Bonacchi et al., 2021)		Five-item instrument to assess physical, psychological, spiritual, relational, and general well-being

Comprehensive well-being scale (Sham et al., 2021)	20 items	Factor analysis yielded a 2-factor structure, i.e., Intrapersonal Well-Being, and Transpersonal Well-Being
General Well-being Schedule, (Dupuy1977)	23 items	Focuses on subjective feelings of psychological well-being
Life Satisfaction Index A (Neugarten et al., 1961)	20 items	Focuses on psychological well-being
Quality of Life Scale (Hyde et al., 2003)	19 items	Assess psychological well-being related to the quality of life; it measures four domains (i.e., control, autonomy, pleasure, and self-realization)
Mental Health continuum is Long and Short-Form (Lamers et al., 2011)	40 items 14 items	Measures psychological well-being, social well-being, and emotional well being
Flourishing Scale (Diener et al., 2010)	Eight items	Mainly measures psychological well-being in the flourishing domain
PREMA Profiler (Butler & Kern, 2016)	23 items	It mainly measures psychological well-being in the flourishing domain, and the subscales include positive and negative emotions, engagement, relationships, meaning, accomplishment, and health.
Flourishing Index (VanderWeele, 2017)		Assesses Psychological Well-Being
Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988)	20-items	Assesses positive and negative affect
Bradburn Scale of Psychological Well-Being (Affect Balance Scale) (Bradburn & Noll, 1969)	Ten items	Assesses positive and negative affect
Satisfaction with Life Scale (Diener et al., 1985)	Five items	Assess general life satisfaction
Life Satisfaction Scale (Koivumaa-Honkanen, 1998)	Four items	Assess general life satisfaction
Pearlin Mastery Scale (Pearlin & Schooler, 1978)	Seven items	Assesses positive psychological well-being
Internal-External Locus of Control Scale (Rotter, 1966)	29 items	Assesses mastery domain of positive psychological well-being
Subjective Happiness Scale (Lybomirsky & Lepeer, 1999)	Four items	Assesses happiness domain of positive psychological well-being

Concept of Quality of Life:

Quality of life (QoL) emerged in the early 1970s, as a measure of wellness, in the context of diseases and disability. Over the years, the importance of the concept has increased, and the idea of QoL has been used in the context of evaluation of the performance of a country in different

aspects, including healthcare, politics, and employment. The importance of the concept of QoL can be understood from the perspective that it is now considered that gross domestic production (GDP) should not be regarded as the only parameter for evaluating a country as it does not provide information about a country's social progress. Accordingly, it is vital to understand the QoL. According to the European statistical system that considers QoL in the context of a country, QoL is determined by material living conditions (income, consumption, and material conditions), production, health, education, leisure, and social interactions, economic security and physical safety, governance and fundamental rights, natural and living environment, and overall experience of life.

The QoL specifically related to health is understood as HRQoL, that is described in the context of a person. In the context of health, the concept of QoL has been used to monitor the performance of health services, evaluate the outcome of various interventions for health conditions, and indicate unmet needs (Phyo et al., 2020).

Although the concept of QoL has been now used for more than half a century, there still needs to be more consensus on the definition of QoL. As per the WHO, QoL is defined as *"an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards and concerns"*(WHO, 2020). It is further clarified that QoL refers to a subjective assessment rooted in the person's cultural, social, and environmental context. Besides this, there are other definitions of QoL too. Wenger et al. (1984) defined QoL as *"an individual's perceptions of his or her functioning and well-being in different domains of life."* Another definition that only focuses on positive aspects of life defines QoL as *"The essential characteristics of life, which in the general public is often interpreted as the positive values of life, or the good parts of life, or the total existence of an individual, group or society"* (Lindstrom, 1992). Although it is emphasized that QoL is more of a subjective judgment, some of the researchers have argued that QoL is determined by a host of objective parameters and, accordingly, define QoL as *"an overall general well-being that comprises objective descriptors and subjective evaluations of physical, material, social, and emotional well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values"* (Felce & Perry, 1995).

There have been some efforts to distinguish QoL from other related concepts, especially in the context of health and diseases. QoL differs from symptoms of an illness or disability arising from the illness. In the context of any illness, QoL should be understood as the perceived effect of the illness by the person on their life (WHO, 2020). QoL also should not be understood as the same or similar to lifestyle, life satisfaction, mental state, or well-being. QoL is understood as perception of the individual about their life, whereas 'well-being' is more of an indication of positive emotions and satisfaction or contentment, with the lack of long-standing and persistent negative emotions (Zikmund, 2003). QoL also should not be equated with the standard of life, which is determined by wealth or material goods (Skevington, 2007).

Regarding indicators of QoL, it is influenced by physical and mental health, environment, employment, wealth, education, recreation and leisure time, social belongingness, religious beliefs, safety, security, and freedom. Regarding various dimensions of QoL, according to the WHO Quality of Life (WHOQOL) group, the various dimensions of QoL include physical, psychological, independence, social relations, environmental and spiritual. These dimensions can be further categorized into different facets (25 facets as per the WHOQOL group) that are reliable and valid across the globe (WHO, 2020).

The concept of QoL in the context of health is understood as HRQoL. Some authors define HRQoL as a holistic emphasis on the patient's social, emotional, and physical well-being after treatment (Greer, 1984). Others understand HRQoL as the impact of the person's health on their ability to lead a fulfilling life (Bullinger et al., 1993). According to another definition, HRQoL is a person's subjective experience directly or indirectly related to health, disease, disability, and impairment.

Further, the authors clarify that people rate their HRQoL by comparing their experience and expectations (Carr et al., 2001). It is further clarified that the previous experience influences our expectations during the illness. Accordingly, the authors suggest that the impact of any chronic illness on the QoL of a person can be reduced by helping them to adjust their expectations and adapt to the change or the new clinical status (Carr et al., 2001). Hence, health promotion should focus on changing people's expectations (Carr et al., 2001). Other authors refer to HRQoL as the patient's report of functioning and well-being in physical, mental, and social domains of life. Functioning is further clarified as physical functioning in self-care, role functioning (i.e., work-performance irrespective of payment status), and social functioning (interaction with family and friends). Accordingly, these authors consider HRQoL less subjective than well-being (Kaplan & Hays, 2022). Other authors' descriptions of HRQoL, which is a crucial element of successful ageing and includes life expectancy, life satisfaction, mental and psychological health, physical health, and functioning, concentrate on the various facets of a person's life that are impacted by health, disease, and its treatment. (Leow et al., 2013).

According to the Centre for Disease Control and Prevention, the HRQOL is influenced by individual and community factors. Perceptions of physical and mental health and its factors, such as health risks and conditions, functional status, social support, and socioeconomic position, are among the individual-level determinants of HRQOL. The resources, environments, situations, policies, and practises that affect a population's views of their health and functional status are included in the community-level determinants of HRQOL.

Regarding assessment, QoL in the context of health has been guided by the problem-solving needs in the day-to-day clinical practice to better understand the patient's priorities and provide services to them (Skevington, 2007). The various available QoL instruments can be broadly divided into generic QoL instruments and those that are disease-specific. Some of the standard generic QoL instruments include WHOQOL-100, WHOQOL-BREF, Medical Outcomes Study Short-Form 36 (MOS SF-36), EuroQol EQ-5D, Short-Form Health Survey (SF-12), Visual Analogue Scale EQ-VAS, etc. Studies involving patients with various physical illnesses suggest impairment in QoL.

Mental Health Issues in Patients with Physical Illnesses

Mental health issues are widespread in patients with various chronic medical illnesses. These have been commonly studied in the form of stress, depression, anxiety, sleep disturbances, cognitive disturbances, and poor well-being. Other psychosocial issues identified in these patients include high out-of-pocket treatment costs, social isolation, loneliness, pain/discomfort, anger, hopelessness, and pain (Van Wilder et al., 2021). The prevalence of depression in various physical illnesses varies from 7-86%, depending on the assessment instruments, time of assessment, and type of physical illnesses (Grover, point of care). The relationship between mental health issues and chronic physical diseases has been further studied to understand the impact of one on the other. It is now well-recognized that mental health issues contribute to the development of certain medical diseases. The presence of undiagnosed or untreated mental disorders also contributes to poor medication and treatment adherence and poor participation in

rehabilitation. For example, studies involving patients with coronary heart disease (CHD) suggest that depression increases the risk of CHD by 30-80% (Carney & Freedlan, 2017). Further, these studies indicate a dose-response relationship between depression and CAD. Data also suggests that the risk of CHD conferred by depressive symptoms is comparable to that of traditional risk factors, such as hypertension, smoking, diabetes mellitus, and dyslipidemia (Blumenthal, 2008). Depression has also been shown to increase all-cause mortality, cardiac mortality, and cardiovascular events (Carney & Freedlan, 2017). The high level of comorbidity between cardiac illness and depression has been linked to biological factors, psychosocial factors, and behavioral factors (Bucciarelli et al., 2020). There is ample evidence to suggest that mental disorders also influence the outcome of various physical health conditions (Dragioti et al., 2023). In a review of the evidence, the authors reported that there is convincing evidence to suggest that the presence of mental disorders increases the risk of cardiovascular mortality (i.e., the presence of schizophrenia) and all-cause mortality (i.e., the presence of depressive disorder) (Dragioti et al., 2023). Further evidence is also highly suggestive of indicating that the presence of mental disorders influences the outcome of decompensated liver cirrhosis (i.e., presence of alcohol use disorder), diabetes mellitus (i.e., presence of depressive disorders), cancer (i.e., presence of schizophrenia), major cardiac events (i.e., presence of depressive disorders), renal failure (i.e., presence of depressive disorders). The authors also noted that the evidence suggested the association of cardiovascular mortality with bipolar disorder and anxiety disorders and all-cause mortality in patients with renal failure and depressive disorders (Dragioti et al., 2023). Although evidence is weak, there is some evidence to suggest that mental disorders also influence the outcome of patients with stroke, tuberculosis, hepatitis-C, Parkinson's Diseases, Human immunodeficiency virus (HIV), various cancers (Breast, Lung), and hip fracture (Dragioti et al., 2023). Chronic medical illnesses, especially terminal illnesses, are also associated with significant spiritual distress and express spiritual needs.

Treatment Models Focusing on Well-being & QoL

Various treatment models have been proposed to provide holistic care to patients with physical illnesses with or without mental health issues to improve their well-being and QoL. Some of these models include the consultation liaison psychiatry, integrated care, and palliative care models.

CL Psychiatry Model: The consultation-liaison psychiatry (CLP) is understood as *"a subspecialty of clinical psychiatry that includes clinical, teaching, and research activities of psychiatrists and allied mental health professionals in the non-psychiatric divisions of a general hospital." (Lipowski, 1983).* The word consultation is understood as providing an expert opinion to another specialist regarding diagnosis and advice on managing a patient's mental state and behavioral disturbance. On the other hand, liaison refers to the connection between groups for effective collaboration *(Lipowski, 1967,1983).* Over the years, the subspecialty of consultation liaison has evolved, and different models of CLP have been proposed (Grover & Naskar, in press). According to most of these models, the mental health professional's role is to carry out a thorough psychosocial assessment of the patient and provide pharmacological and non-pharmacological care as per the patient's needs.

Chronic Care Model (CCM): CCM differs from the reactive care model based primarily on managing acute events (especially in a hospital setting); CCM is a proactive approach that empowers the patient and the community. It is usually implemented in the primary care setting. It is based on the six key components, i.e., a) utilizing the community resources (i.e., using community resources such as volunteer groups, self-help groups, etc., to address the patient's

needs), b) health care organizations (i.e., having an organization with a culture and mechanisms that promote safe and high-quality care); c) promoting self-care (enabling the patients in the process of care by promoting effective self-management strategies such as action plans, coping strategies, problem-solving, and follow-up, etc.),d) having a professional team (a multidisciplinary team focusing planned management of patients with chronic illnesses), e) decision support (i.e., promotion of care based on evidence and preferences of patients) and f) development of computerized information systems (that can support record keeping, that can alert primary care teams to adhere to the guidelines and for providing feedback to the physicians, and to monitor the performance of the team and the system). Available data suggest that implementing CCM in many countries has contributed to improved quality of care, health outcomes, and reduced disparities (e.g., ethnicity, social status) too (Capelli et al., 2016).

Collaborative/Integrated Care Models: Collaborative and integrated care are often used interchangeably. At times authors have also described these as models of CLP. Integrated care is *"the care that results from a practice team of primary care and behavioral health clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population."* (Peek CJ and the National Integration Academy Council, 2013). The collaborative care model attempts to create a close working relationship between different treating team members, especially at the primary and secondary care level, to provide high-quality care to a patient and improve both mental and physical health outcomes (Ee et al., 2020). In the literature, many collaborative care model types have been discussed. One of the approaches places a strong emphasis on "integrating" behavioural health issue detection and treatment into routine primary care. The second paradigm, known as "reverse integration," focuses on treating comorbid chronic medical issues in patients seen in the behavioural health sector, with the goal of improving patient health outcomes. A third model involves the participation of medical and behavioral health professionals to address total health regardless of the setting. As per this model, behavioral and medical professionals are considered part of a unified network of clinicians (Raney et al., 2013). Regardless of the model, a multidisciplinary team typically offers collaborative care, which may include case management or coordination, patient and provider education, systematic patient follow-up, application of guidelines and algorithms, psychological interventions, and patient-shared decision-making (Ee et al., 2020). Some of the collaborative care models also propose to include m*ulti-component behavior change lifestyle interventions (such as* exercise, diet, sleep, alcohol reduction, and smoking cessation interventions) to improve lifestyle risk factors for both physical and mental illness, use of a*djunctive nutraceutical treatments (*such as omega-3 fatty acids, select amino-acids and vitamin compounds, along with potential use of plant medicines) and use of m*ind-body therapies (*such as yoga, and mindfulness-based interventions). According to American Psychiatric Association, five essential features of the collaborative care model include patient-centered team care (providing care for both mental and physical health services in a familiar location), population-based care (proper tracking of the patients and involving the psychiatrists to provide case load-focused consultations), measurement-based treatment to target (evaluating the outcomes by using evidence-based tools), evidence-based care and accountable care (i.e., the providers are accountable and reimbursed for the quality of care and clinical outcomes, rather than just based on the volume of care provided) (APA).

Palliative Care Model: WHO defines palliative care as *"an approach that improves the QoL of patients and their families facing the problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification and impeccable assessment*

and treatment of pain and other problems, physical, psychosocial and spiritual" (WHO, 2020). According to another definition palliative care is *"an integrated approach that promotes the QoL of patients and families who are confronted with the physical, psychosocial and spiritual problems associated with a life-threatening illness"* (Almada et al, 2018). It is further, elaborated as a form of care that *"affirms life and accepts death as a natural process without trying to delay the process and constitutes a global and holistic approach to the patients suffering from a physical, psychological, social and spiritual point of view; seeks the well-being and QoL of the patient, is centered on the needs of patients and their families, life and death, that should not be restricted to terminally ill and agonized patients and should be addressed by a multidisciplinary team".* It's critical to remember that palliative care is focused on the patient's requirements, not on the likelihood of recovery. Furthermore, it is crucial to understand that it can be given in conjunction with curative treatment and is appropriate for patients of any age and stage of a serious illness (regardless of the diagnosis and prognosis), and that it primarily focuses on relieving symptoms and stress associated with the illness. (Prabhakar & MacLean, 2022). Some clinicians believe that there are many similarities between psychiatry and palliative care. These clinicians consider psychiatry care as a form of palliative care because psychiatric treatments, especially those for severe mental disorders, are frequently focused on improving QoL, and many are not curative. Additionally, the fundamental competencies of both psychiatry and palliative care include comprehensive and careful communication about diagnosis, prognosis, symptom evaluation and management, carer need assessment, and referral for extra medical services. Furthermore, both professions require important behaviours including a caring attitude, empathy, and optimism. Additionally, there is open discussion regarding the patient's discomfort and the best way to handle it (Prabhakar & MacLean, 2022).

Wellness interventions

The primary goal of wellness interventions is to address the issues in the day-to-day management of the disease, improving the outcome and reducing the cost of management of chronic illnesses (Lorig & Holman, 2003). Wellness interventions are also often referred to as self-management. Some authors have attempted to distinguish the understanding of wellness interventions from health promotion interventions. These authors emphasize that health promotion interventions are not specific to any illness, and the approach is not motivated. In contrast, wellness interventions are considered to be motivated by the desire to avoid an illness or its consequences (Pender et al., 2006). The commonly described wellness interventions in the literature include exercise, nutrition, stress management, and general health education. These interventions are carried out on an individual basis or group basis. Different studies evaluating the effectiveness of these interventions have been carried out (Stuifbergen et al., 2010).

One of the crucial strategies of wellness interventions includes self-management, which incorporates all the wellness interventions. Self-care, self-regulation, patient education, and patient counselling are all terms that are frequently used interchangeably with the phrase "self-management." But it's crucial to remember that self-management goes beyond educating the patient about their chronic condition and giving them better information about it (Grady & Gough, 2014).

Self-management is understood as the ability of the person to manage their symptoms, treatments, lifestyle changes, and the illness's psychosocial, cultural, and spiritual consequences. Self-management is a vital component of managing chronic illnesses and is the primary responsibility of the patient to care for themselves while suffering from a chronic illness. In this context, 'self-management support' refers to the process by which people with chronic illnesses

and their families are provided information and support to help them to understand their crucial role in the management of chronic illness, make informed care decisions, and indulge in healthy behaviors (Hessler et al., 2019).

There are various tasks and processes involved in self-management. The tasks of self-management involve medical management of chronic illness, behavioral management, and emotional management. The core self-management processes include problem-solving, decision-making, resource utilization, partnerships with healthcare providers, and taking action (Grady & Gough, 2014). The processes involved in self-management have been further expanded and include focusing on the illness needs, activating the resources, and living with the chronic illness (Grady & Gough, 2014).

Self-management for chronic diseases has been enforced in many countries, and different self-management programs have been described in the literature. According to one such program, i.e., the Stanford Chronic Disease Self-Management Program, workshops are organized once a week for six weeks, each lasting for two and a half hours. The workshops are conducted in senior centers, libraries, churches, and hospitals, and persons with different chronic conditions attend these programs. Techniques to deal with issues like frustration, fatigue, pain, and isolation are some of the topics covered in the workshops, along with the value of exercise, proper medication use, how to effectively communicate with loved ones and carers, nutrition, and the assessment of novel treatments. Two trained workshop facilitators with chronic illnesses, one or both of whom are not medical professionals, lead the sessions (Chronic disease self-management program; Capelli et al., 2016). Some of the other programs include a few more components as part of the self-management program, and the components can also vary depending on the type of chronic physical illness (Table-3). Further, the content of the self-management programs is also influenced by the objective(s) of the program (Newman et al., 2004).

Table-3: Topics covered in self-management programs for chronic illnesses (CDC self-management program)

	Chronic illnesses	Diabetes Mellitus	Heart Diseases	Cancers	Epilepsy	Persons with disability
Techniques to deal with problems such as frustration, fatigue, pain, and isolation	+		+	+		
Techniques to deal with poor sleep, and living with uncertainty				+		
Physical exercise for maintaining and improving strength, flexibility, and endurance	+	+	+	+		+
Appropriate medications regularly as indicated	+	+	+			
Effective communication with family, friends, and health professionals	+		+	+		+
Focusing on relationships	+			+		
Learning to cope with stress, depression, and other concerns	+	+	+		+	+
Managing psychiatric morbidity like, depression	+	+	+			+
Relaxations techniques including breathing exercises	+		+			
Healthy eating – type of food and food habits	+	+	+	+		+
Taking good and appropriate decisions related to health condition	+		+	+		
Evaluating new treatments	+		+			

Understanding the illness	+	+	+	+	+	
Checking blood sugars		+				
Reducing risk for other health conditions and complications		+				
Learning to cope with stress, depression, and other concerns		+				
Setting priorities				+	+	
Improving cognition						
Talking to friends and family about your epilepsy					+	
Goal Setting						+
Problem-solving						+
Having a positive outlook						+
Seeking information and advocacy						+
Maintaining positive changes						+

The success of the self-management program is influenced by the patients' relationships with their healthcare providers, friends, and community and family members. Available data suggest that a higher level of adherence to self-management and better control over the illness is seen in patients with chronic illnesses with a higher level of family support. Considering the importance of the family, family-centered self-management programs have also been evaluated.

Different self-management programs have been evaluated for physical illnesses such as diabetes mellitus, low back pain, arthritis, heart disease, lung disease, stroke, arthritis, or multiple chronic conditions (Grady & Gough, 2014).

However, it is crucial to understand the facilitators and barriers to running a successful self-management program (Table-4) (Novak et al., 2013; Ahola & Groop, 2013). These can help in designing a successful self-management program.

Table-4: Facilitators and Barriers to Self-Management (adapted from Novak et al., 2013; Ahola & Groop, 2013**)**

Facilitators
Organizational supports and strategies (healthcare system-level): • Having a dedicated place in a healthcare setting to run the self-management program • Having dedicated timing to run the self-management program • Educating the staff about communication skills, motivational interviewing, behavioral change interventions, etc.) • Having interdisciplinary clinics, and multidisciplinary staff • Developing services in line with the collaborative care models • Allocated healthcare resources (e.g., financial resources, staff) **Healthcare provider strategies:** • Improving partnership and collaboration with the patients • Providing continuing education and improving the skills (interprofessional education, communications skills, empathy skills, etc.) **Patient-directed strategies used by healthcare providers:** • Ensuring that patient has access to information about the illness based on their needs and resources • Educating the patient about the illness(es), they are suffering from, management, and resources (by providing printed and online materials as well as educational sessions

• Developing a holistic approach to patient care • Understanding the barriers⁄ motivation to develop individually targeted interventions (‘‘individualized health plan’’) • Assessing and addressing emotional aspects and barriers • Regular follow-ups in person or telephonic contact with healthcare providers (assessment, discussion of outcomes with facilitators and barriers, providing feedback and support) • Facilitating ongoing peer support, e.g., groups, online forums • Involving the caregiver⁄ family members in the self-management (according to patient preference)
Barriers to self-management
• Lack of knowledge about the illness • Having only didactic lectures rather than interaction • Poor health literacy (i.e., individual's capacity to read, understand and make use of healthcare-related information for decision-making and self-care) • Poor motivation fueled by the faulty health beliefs • Low self-efficacy (i.e., belief in one’s competence in successfully performing a given action) • Higher use of maladaptive coping and poor problem solving • External locus of control • Presence of depression/depressive symptoms • Poor social support • Poor communication with the healthcare provider

Psychotherapeutic interventions for improving self-care, wellness, and QoL

Different studies have evaluated the role of various psychotherapeutic techniques in improving self-care among patients with chronic medical conditions. Some of the studies have attempted to address the barriers to self-care by using techniques such as motivational interviewing and interventions aimed at enhancing self-efficacy. Interventions that focus on improving wellness and QoL include acceptance and commitment therapy (ACT) and mindfulness-based meditation techniques (Steiner et al., 2020). The positive psychotherapeutic interventions have also been shown to have a positive influence on the well-being and QoL.

Other interventions

Collaborative care has been shown to improve depression and QoL in patients with chronic physical illnesses (Steiner et al., 2020).

Effectiveness of Management Strategies for Improving Well-being and QoL

The effectiveness of various wellness interventions and self-management programs has been assessed in different studies. Some evidence supports the beneficial role of wellness interventions such as exercise, nutrition, and stress management in improving the outcome of illnesses (Stuifbergen et al., 2010). However, it is essential to note that most of these studies have been of small sample sizes and varied considerably in the duration of intervention and the outcome of the intervention being evaluated (Stuifbergen et al., 2010). The different outcomes of interest in the various self-management intervention studies for chronic medical illnesses include health behaviors, health status, QoL, and utilization of healthcare services (Allegrante et al., 2019).

Different reviews and metanalysis have evaluated the efficacy/effectiveness of self-management programs for various chronic illnesses. However, one of the crucial limitations of the available literature is heterogeneity in the content of the self-management programs being evaluated for different illnesses, including heterogeneity in the self-management interventions being evaluated for a specific disease, for example, diabetes mellitus. A recent metanalysis included 145 randomized controlled trials (n=36,853) published between 2008 and 2019 that evaluated the self-management interventions for diabetes mellitus (type-2), heart failure, coronary artery disease, hypertension, asthma, and chronic obstructive pulmonary disorders showed that overall effect size for improved outcome was small (Hedges' $g = 0.29$; 95% CI = 0.25–0.33, $p < 0.001$) with statistically significant heterogeneity across trials ($Q = 514.85$, $p < 0.001$, $I^2 = 72.0\%$), with more than half (57.2%) of the trials considered to have a high risk of bias (Lee et al., 2022).

A review that compared the outcome of self-management interventions with the usual standard care in primary care and attempted to identify the effective strategies that lead to improved clinical and humanistic outcomes. The commonly used self-management interventions used in different studies were imparting knowledge about the illness and/or its treatment (100%), encouraging to carry out the physical activity (47.4%), improving problem-solving and/ or decision-making skills (47.4%), self-treatment through use of self-management or action plan (45.6%), active stimulation of symptom monitoring (43.9%), improving coping or stress management (43.9%), encouraging intake of a healthy diet (42.1%), improving medication adherence (36.8%), promoting use of other health services or support resources (22.8%) and promoting smoking cessation (22.8%) (Dineen-Griffin et al, 2019). According to the authors, at the primary care level, this requires an organised patient-provider dialogue. This should include a one-on-one conversation between the patient and the practitioner, continuing monitoring, and the distribution of self-help resources. The authors also suggested that interventions should be customized to the needs of the patient and can combine strategies to improve the patient's knowledge of the illness and the treatment, how to self-monitor the symptoms, encourage the development of a personalized action plan to deal with symptom exacerbations or worsening, improve psychological coping and stress management strategies, and improve responsibility in terms of medication adherence and lifestyle choices. Following up with patients, physicians may offer feedback based on their needs, should track their progress towards healthcare objectives they have established, or may work on improving their problem-solving and decision-making abilities (Dineen-Griffin et al., 2019).

In recent times telehealth has also been utilized for self-management interventions. In a literature review on tele-based self-management for chronic illnesses, authors found some support for telemonitoring with blood glucose feedback and educational and lifestyle interventions in improving glycemic control in patients with type-2 diabetes mellitus only. Similarly, telemonitoring and telephonic monitoring of patients with health failure was associated with lower mortality and hospitalization rates (Hanlon et al., 2017).

Some studies have specifically focused on improving the self-efficacy of persons with chronic illness(es). A review of the literature suggested that the significant barriers to self-efficacy were health literacy (i.e., the degree to which an individual can obtain, communicate, process and understand basic health information and services to make appropriate health decisions"), lack of access to health care (i.e., gaining access to a healthcare system, having access to the needed specialty services and having access to a provider who one can easily communicate with and trust), and support (from the health care provider, family, and friends). The essential strategies reported to improve self-efficacy include self-management programs, telehealth (access to health

information transmitted via technology to support and promote health care from a remote location), mobile applications, gaming, and social media (Farley, 2019).

Many studies have also evaluated the effectiveness/efficacy of the palliative care model in patients with chronic illnesses. The outcome measures of these studies have included the benefit of the palliative care intervention on the general and disease-specific QoL, level of control of psychological and physical symptoms, satisfaction with the care received, medical utilization, caregiver burden, and economic costs. As with studies on self-management, there is significant heterogeneity in the methodology of different studies. Data generally supports the beneficial effects of palliative care on QoL and well-being (Hicks et al., 2022).

Studies have evaluated various positive psychotherapeutic or positive psychology measures to be useful in improving the well-being of patients with chronic physical illnesses (Ghosh & Deb, 2017). Studies have also shown than utilizing the mindfulness-based, spirituality-based and religion-based interventions can help in improving well-being and managing depression in patients with chronic illnesses (Marques et al, 2022).

There is lot of data from India on the role of mindfulness-based interventions and yoga in the management of cardiac diseases, diabetes mellitus and other chronic physical illnesses. The available systematic reviews suggest that mindfulness-based interventions are associated with reduction in diastolic blood pressure in patients with non-communicable diseases (Intarakamhang et al, 2020). Mindfulness-based interventions in patients with cardiac disease have been shown to improve depression, anxiety, stress, blood pressure, body-mass index (Parswani et al, 2013).

Mindfulness-based interventions in patients with diabetes mellitus has been shown to improve biological (reduction in blood glucose levels, Hba1c levels, blood pressure, weight, body mass index, reduction in heart rate variability, better medication adherence and adherence to lifestyle measure, better acceptance of disease), psychological (reduction in depression, stress, worry, substance use; improvement in subjective health, eating behaviour, self-esteem; more use of positive coping) and social (reduction in non-functional days, better physician-patient relationship, greater productivity, etc.) outcomes (Priya & Kalra, 2018). Yoga has also been associated with improvement in blood sugar in patients with diabetes mellitus (Raveendran et al, 2020).

Management of Mental Disorders in Patients with Chronic illnesses

Assessment and management of various mental disorders in chronic physical illnesses is paramount. A detailed discussion of this is out of the scope of these guidelines, and the Clinical Practice Guidelines of the Indian Psychiatric Society of chronic illnesses involving various systems and organs have been published earlier. The readers can refer to them to manage a diagnosable psychiatric disorder in the presence of physical disease.

Recommendations for incorporation of wellness interventions and self-management programs for chronic medical illnesses

Most chronic physical illnesses are not curative and are associated with significant adverse social consequences for the patients and their family members. Due to all these consequences, it is now suggested that clinicians managing patients with various physical illnesses should not limit themselves to managing the signs and symptoms of the diseases but should also focus on providing holistic care and attempt to prevent the development of medical illnesses and their

complications. Accordingly, while providing holistic care, addressing the person's needs is vital to improving the well-being and QoL.

Keeping this in mind, in the following section, we discuss the scheme of assessment for providing holistic care to patients with chronic illnesses, including those with comorbidities. This assessment and management should complement the pharmacological treatment for the primary illness. This assessment can be done in any setting. Although there are specific differences in the primary focus of assessment as per the palliative care model, collaborative care model, CLP model, and chronic care model, the basic principles have some overlap. The current recommendations are based on the principles of improving well-being and QoL. Ideally, the physician involved in managing the particular disease should be competent to carry out the assessment. If the mental health professional is part of the multidisciplinary team providing holistic care to the patients, then they should be involved in the assessment and management of the patient and the caregivers and should also be involved in training other professionals in carrying out detailed assessment and management. The assessment should take cultural factors into account.

The assessment should focus on psychological, social, spiritual, and biological domains (Table-5). The assessment scheme should be similar for the patients and their family members involved in the care of the patient. The biological assessment should include understanding the type of physical illness(es), including complications. Assessment should also focus on the ongoing treatment, including the side effects and their impact on the patient's well-being and QoL. While focusing on the ongoing medications, it is important to focus on the polypharmacy, use of medications that are not required and duplicate medications. Where ever required, deprescription should be considered. Besides all these, it is also essential to assess the level of disability, impairment, and functioning of patients with chronic illnesses.

The psychological assessment is crucial for managing patients with any physical illness(es). The psychological assessment should focus on screening for common mental disorders, predominantly depressive and anxiety disorders. If required, clinicians can take the help of various screening instruments to assess various psychiatric disorders and other psychological issues (Table-6). While evaluating the psychiatric disorders, effort should also be made to understand the etiology of these conditions, i.e., whether these are related to the ongoing medications, are an outcome of distress/stress related to the illness or an outcome of the environmental situation arising due to the illness. Besides focusing on diagnosable psychiatric disorders, assessment should also focus on understanding the subsyndromal psychiatric symptoms and ongoing stress in the patient's life. Another important aspect of assessment is to identify grief in the patients, which may be related to disclosure of the diagnosis, relapse of symptoms, emergence of complications, or imminent death. The psychological assessment should also focus on understanding suicidality, substance use (current and past), and cognitive functioning. A good understanding of the patient's cognitive functioning may help in tailoring the amount of information to be provided in one go. It is often noted that many patients and their caregivers do not have adequate knowledge about the illness. Hence, the psychological assessment should also focus on understanding the knowledge about the illness of the patient and their family members. Other psychological factors that can influence the treatment include health/illness-related beliefs, as these involve help-seeking, following the advice of the health care professionals in terms of taking the medications, following advice about exercise and physical activities, seeking alternative treatments, and following the homemade remedies or advice given by clinicians from other pathies or by non-clinicians. The psychological assessment

should also focus on other psychological issues such as well-being, loneliness, self-isolation, coping, QoL, and locus of control. Loneliness is defined as *"the discrepancy between an individual's desired and achieved levels of social relationships."* (Perlman & Peplau, 1981). Social isolation is recognized as an actual quantifiable shortfall in a person's social relationships that can be measured in the form of the size of the person's social network and the frequency of contacts (de Jong et al., 2006). The assessment of coping mechanisms should focus on evaluating the use of adaptive and maladaptive coping used by the person to deal with stress. An essential aspect of psychological assessment also includes understanding the locus of control, which is considered a personality trait. In the context of health, locus of control is understood as the extent of control people believe they possess over their health and the outcome of illness. The locus of control is generally described as an internal and external locus of control. People with a high internal locus of control believe that their actions influence their health-related outcomes and are more likely to comply with the advice for interventions such as exercise and nutrition. On the other hand, persons with a high external locus of control believe that rather than having control over their health outcome, it is influenced by other influential people, such as health care professionals, or other factors such as luck, chance, or fate (Rotter, 1966). Self-efficacy is a person's belief about their competence in successfully performing a given action. Self-efficacy influences the person's ability to manage the symptoms of chronic illness. It is also supposed to influence the initiation of self-care actions, the amount of effort made in the self-care actions, and the sustenance of the self-care management strategies when faced with obstacles and failures. It is generally believed that a high level of self-efficacy in dealing with chronic illnesses is reflected in a perceived ability to manage the chronic disease and a sense of control over life (Zhu et al., 2018).

The assessment of social factors should include understanding the available social support from family, friends, and healthcare providers. It is essential to understand that, at times, based on the number of relatives available for care, a patient can have good social support, but this may not be true. The vital aspect of social support evaluation includes understanding the perceived social support by the patient. Another important social aspect of evaluation includes understanding access to specialist care. In an Indian setting, super-specialists are often available in big cities only. People from rural backgrounds may need better access to these specialists, and this lack of availability may cause distress and poor well-being. Depending on the illness, it may be necessary for some patients to understand the perceived stigma.

Spirituality is a fundamental element of human experience. It encompasses the individual's search for meaning and purpose in life and the experience of the transcendent. Spirituality is *"a dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence, and experience relationship to self, family, others, community, society, nature, and the significant or sacred*." It usually manifests through beliefs, values, traditions, and practices (Puchalski et al., 2014). Many patients with chronic illnesses use spirituality as a method of coping with the illness. Spirituality also acts to reassess their lives and appreciate reality, despite the suffering. Many patients with chronic illnesses, especially those with terminal illnesses, often experience "spiritual distress," which is understood as an *"impaired ability to experience and integrate meaning and purpose in life through the individual's connectedness with self, others, art, music, literature, nature, or a power greater than oneself*" (Hedman, 2009). Accordingly, spiritual care is understood as recognizing the spiritual needs of the patients and addressing them in a clinical context. Given this, assessing the spirituality of

patients with chronic illnesses is essential. Different models have been proposed for the assessment of spirituality and spiritual distress (Table-7).

It should be remembered that the psychological, social, and spiritual assessment should not be limited to the patients only but should also be extended to the caregivers/family members involved in the patient's care. Additionally, the caregivers should also be assessed for issues like caregiver burden, psychological morbidity, caregiver distress, financial burden, anticipatory grief, adjustment to illness, caregiver abuse, self-neglect, expressed emotions, lack of sleep and lack of time for self.

It is also important to note that assessment of issues that affect well-being and QoL should be an ongoing process and patients and caregivers should be assessed regularly for the same.

Table-5: Assessment of patients with chronic illnesses to improve their mental health, well-being, and quality of life

Assessment of Patients

- All possible physical illnesses, including multimorbidity
- The severity of the physical illness(es)
- The current treatment being received for the physical illness
- Ongoing medications- focus on polypharmacy, especially duplicate medications including the side-effects experiences with the medications
- Medication adherence – current and the in the past
- Knowledge about the illness(es) of the patients and the family members/caregivers
- Health/Illness related beliefs
- Beliefs related to the treatment
- Cultural factors influencing the beliefs
- Psychiatric history- including past psychiatric illness and treatment
- Substance use- lifetime and current use
- Current common mental disorders- depression/depressive disorders, anxiety, insomnia, suicidality
- Grief- related to diagnosis, relapse, or anticipated mortality
- Cognitive functioning
- Other mental health issues- stress/distress, well-being, loneliness, demoralization, self-isolation, coping, QoL, locus of control, etc.
- Self-efficacy
- Social support
- Stigma
- Access to care- including specialist care and telehealth services
- Spiritual distress and spiritual needs
- Patients' needs
- Disability and level of functioning
- Follow-up: pattern

Assessment of Caregiver issues:

- Caregiver burden, caregiver distress, psychological morbidity, etc.
- Financial burden, Anticipatory grief, Adjustment to illness
- Abuse, Self-neglect, expressed emotions
- Lack of time for self, lack of sleep
- Not being thanked…….etc.

Table-6: Screening scales that health workers and physicians can use to screen for various mental disorders

Variable	Scale
Stress	• Perceived Stress Scale
General Screening Questionnaires	• General Health Questionnaire • Self-Report Questionnaire
Depression	• Patient Health Questionnaire (2 items, four items, nine items version) • Beck Depression Inventory • Geriatric Depression Scale
Anxiety	• Generalized Anxiety Disorder Questionnaire • Hamilton anxiety rating scale
Depression, anxiety (and stress scale)	• Hospital anxiety and depression scale • Depression, anxiety, and stress scale
Somatic symptoms	• Patient Health Questionnaire 15 items • Somatic Symptoms Scale - 8 items
Cognitive functions	• Mini-mental Status Examination • Hindi Mental Status Examination • Clock drawing test
Substance use disorders	• Alcohol, Smoking, and Substance Involvement Screening Test • Cut-Annoyed-Guilty- Eye opener (CAGE) Questionnaire
Suicidality	• Use item number 9 from the PHQ-9 • Beck suicide inventory
Well-being	see table-2 for the list of scales
Loneliness	• UCLA Loneliness scale • De Jong Gierveld loneliness scale
Social-isolation	• Lubben Social Network Scale • Berkman Social Network Index
Self-efficacy	• Self-efficacy to manage chronic disease scale measures
Locus of control	• Multidimensional Health Locus of Control scales
Quality of life	• World Health Organization Quality of Life (WHOQOL) scale • WHOQOL-BREF scale • EuroQOL-5D (EQ-5D)
Spiritual well-being	• Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being 12-Item Scale

	• Spiritual Injury Scale

Table-7: Models for assessment of spirituality

SPIRIT Model • **S-**Spiritual Belief System • **P-**Personal Spirituality • **I -**Integration in a Spiritual Community • **R-**Ritualized Practices and Restrictions • **I -**Implications for Health Care • **T-**Terminal Events Planning (advance directives, do not resuscitate wishes, DPOA, etc..)
FICA Model (Puchalski & Romer, 2000) • **F -** Do you have a spiritual belief? Faith? Do you have spiritual beliefs that help you cope with stress? What gives your life meaning? • **I-** Are these beliefs important to you? How do they influence you in how you care for yourself? • **C-** Are you part of a spiritual or religious community? • **A-**How would you like your healthcare provider to address these issues with you?

Role of mental health professions in improving wellness and QoL of people with chronic medical conditions

As mentioned earlier, mental health professionals may be directly involved in assessing and managing patients with chronic physical illnesses as part of a multidisciplinary team. Additionally, they are responsible for training other clinicians, nurses, and paramedical staff in recognizing patients' psychological, social, and spiritual issues and carrying out detailed biological, psychological, social, and spiritual assessments.

Management of Psychological, Social, and Spiritual Issues to improve well-being and QoL (Table-8)

Health Education: One critical aspect of improving patients' well-being and QoL is providing adequate education to the patients and caregivers about the condition the patient is suffering. The health education can be provided as tailored patient education or encouraging patients to participate in the health education seminar on general topics or disease-specific seminars or discussions. It is now well-known that health education profoundly impacts the patient's knowledge about their medical condition and enhances their understanding of the consequences of carelessness about their health. It has also been shown that health education improves adherence to prescribed medications and makes long-lasting lifestyle and dietary pattern modifications. Together, these improve the patients' survival and QoL in the long run. Participation in health education seminars can also lead to improvement in social interaction among the sufferers, which may lead to a feeling that they are not alone who is suffering, can lead to the development of social networks among the patients, provide an opportunity to learn

from each other and share their experiences. These experiences can lead to a feeling of well-being and improve QoL. However, it is essential to understand that it may be, at times, challenging to travel specifically to participate in tailored health education discussions and health education seminars. The emergence of telemedicine services can fill this void significantly by carrying out online health education sessions.

Health promotion: In chronic illnesses, health promotion is ***"****efforts to create healthy lifestyles and a healthy environment to prevent secondary conditions, including teaching individuals to address their health care needs, increasing opportunities to participate in usual life activities and striving for optimal health. These secondary conditions may include the medical, social, emotional, mental, family, or community problems that an individual with a chronic or disabling condition is likely to experience."*(Larsen, 2019). Health promotion involves communication with health professionals on matters related to health and making efforts to refrain from poor nutrition, poor physical activity, substance use (i.e., smoking, alcohol, and other substances), and social isolation because these factors not only contribute to the development of chronic illnesses but also harm the course of the chronic illness (Heggdal, 2021). It also involves supporting the patients' efforts to achieve a healthy lifestyle. Health promotion is expected to enhance hope, reduce the negative consequences of chronic illnesses, and ensure that the effects of chronic disease do not influence the patient's lifestyle.

Self-management programs for chronic illnesses: It is one of the six core components of the chronic care model and is understood as the patients' day-to-day management of chronic illness during the disease. This involves proper medical management of chronic illness, behavioral management, and emotional management of the self. For a successful self-management program, having a good relationship with the healthcare provider, family, and friends is paramount. Clinicians across all specialties need to develop the self-management program and should implement these on a one-to-one basis or in a group format. In the Indian context, to create a self-management program, there is a need to establish a multidisciplinary team to address the self-management needs of the patients and their families. Besides the components being recommended in many Western countries, in the Indian context, the incorporation of yoga and meditation, and mindfulness can be beneficial. Considering the patient load and the time constraint, teleservices can be used to run self-management programs whenever feasible.

Addressing mental health issues: Patients with chronic physical illnesses go through the different phases of disease (disclosure of diagnosis, adjustment to the diagnosis and treatment and their consequences, remission and relapse, terminal illness, etc.). Each stage of the disease brings in different mental health issues. The mental health issues can be syndromal or non-syndromal. The primary physician managing patients with various chronic physical illnesses should be able to screen the patients for various common mental disorders and be aware of basic management principles of the same and when to refer to a psychiatrist. Clinicians can use different screening instruments to evaluate various mental disorders, including suicidality (Table-6). It is to be remembered that this should be an ongoing process, and suicidality of any severity should not be taken lightly. Whenever a patient has a diagnosable mental illness, it should be treated adequately, as it is well known that undiagnosed and untreated mental conditions have a negative impact on the course and outcome of primary physical illnesses. While managing diagnosable mental illnesses with pharmacotherapy, clinicians must be aware of the drug-drug and drug-disease interaction to avoid further complications. The detailed management principles of mental disorders in various physical diseases have been discussed in the earlier clinical practice guidelines issued by the Indian Psychiatric Society.

Positive psychotherapy: It is now understood that remaining 'positive' influences the outcome of various chronic illnesses. It has been shown that remaining positive or optimistic influences the inflammatory response and immunity. It is suggested that having an optimistic attitude also helps make lifestyle modifications pertaining to abstinence from smoking, a healthy diet, improving physical activity, and medication adherence (Dubois et al., 2012). Considering the importance of this, many positive psychotherapeutic interventions have been suggested to improve the adjustment of the person with chronic illnesses and improve the outcome. The commonly described positive psychotherapeutic interventions include acknowledging the positives in life, positive writing (i.e., three blessing exercise, gratitude letter, best positive selves, and benefit finding, etc.), mindfulness and spiritual interventions, acts of kindness and forgiveness can be utilized to improve the well-being of patients with chronic physical illnesses. Acknowledging the positive involves asking the patients to think about what positive is happening in their life rather than focusing on the negatives. In the three blessings exercise, the patients are asked to pen down at least three good things that have happened in their life in the last 24 hours or weeks that have brought happiness to them. It is important to remember that these may not be big things in life, but they could include events like a neighbor saying hello to them. Practicing this often helps the patient to focus on the positives of life rather than just focusing on the negative aspects of life. The writing of a gratitude letter involves the expression of thankfulness to any person, whom the patient has never thanked before, but feels that they should be thankful to such a person because this person's act made them feel a positive way. Depending on the relationship and closeness, the patients may be asked to read these letters to the person. Alternatives to writing the gratitude letter could be making a phone call to the person. Available evidence suggests that expressing gratitude often helps reduce loneliness and health outcomes (O'Connell & Killeen-Byrt, 2018). Patients can be encouraged to write *selves exercise or save a diary*, which involves asking the patient to note what kind of ideal person they want to be in the future. This may also include asking the person to write about possible positive outcomes after being diagnosed with a chronic illness. Other variants of positive writing include benefit finding, which involves writing about the benefits that would have resulted from the situation (Ghosh & Deb, 2017; Dubois et al., 2012).

Other acts that can have been used include writing about the best future social relationships (help to improve social support and relationships). Researchers have also used performing three acts of kindness on a single day, which has been shown to improve the patient's mood. An alternative to this is performing pleasurable and meaningful actions, in which the patient is asked to complete three pleasurable acts in a single day. Out of these three acts, one can be done alone (for example, gardening), other can be done with others (for example, going for a walk with a friend or relative), and one act that is meaningful or important (for example, maintaining the log of their health condition. Such acts can improve life satisfaction (Dubois et al., 2017). Other positive psychotherapeutic interventions include using strength (write about personal strength and choose one of them to use in the next week), writing a forgiveness letter (involves writing a forgiveness letter to a person whose acts made you upset in the past) (Dubois et al., 2017). Identifying character strengths consists in helping the patient identify their strengths that can be used for goal setting and then achieving them (Ghosh & Deb, 2017).

Mindfulness-based interventions: Mindfulness-based stress reduction methods have been shown to impact the metacognitions about emotions positively and can make a person detached from the chronic illness and the consequent negative emotions. Mindfulness helps to develop a positive image of self rather than a negative one (Ghosh & Deb, 2017). The mindfulness-based

interventions can be guided or formal and informal. Formal mindfulness involves focusing on one's breath and then allowing oneself to focus on the present moment, accepting it as it is (rather than focusing on the emotions, thoughts, and the situation per se). Informal mindfulness involves thinking about one's daily routine and how one rushes through the same and then comparing it with a positive event. Yoga and meditation, as suggested by different schools, can also be used in patients with various chronic illnesses.

Spirituality-based interventions: There is an overlap between mindfulness-based interventions and interventions focusing on spirituality. Various spirituality-based interventions have been discussed in the literature. Spirituality-based interventions can involve focusing on an object considered sacred by the patient and then developing a spiritual connection with the qualities of preciousness, blessedness, or holiness (Dubois et al., 2017). This kind of intervention also involves 'Om chanting'.

Religion-based interventions: Religion is considered to be part and parcel of most human beings' life. Religion is defined as *"an organized system of beliefs, practices, rituals, and symbols designed to facilitate closeness to the sacred or transcendent"* (Koenig et al., 2012). It expresses affiliations, beliefs, practices, and rituals (Koenig et al., 2012; Moreira-Almeida et al., 2006). All religions have specific beliefs about life after death and rules about conduct guiding life within a social group (Koenig et al., 2012). Religion is practiced either privately or in public in a group setting. The majority of people across the globe identify themselves with one or more religions. It can be said that religion plays an essential role in the life of many human beings. Studies suggest that religious and spiritual beliefs, thoughts, and practices (e.g., spiritual coping activities) can have both beneficial and deleterious effects on how people deal with their illness, on psychosocial adjustment, on mental and physical health, and treatment adherence (Iannello et al., 2022). Religion and spirituality also influence health behavior and mental health outcome (Koenig, 2012). Religion-based interventions (religiously integrated cognitive behavioral therapy, listening to religious content and attending sermons, and reading pamphlets related to religion and spirituality) have been shown to reduce depression in patients with chronic illnesses (Marques et al., 2022).

Table-8: Intervention to improve well-being and QoL

- Health Education & Health Promotion
- Self-management
  - ✓ Techniques to deal with problems such as frustration, fatigue, pain, and isolation
  - ✓ Appropriate exercise for maintaining and improving strength, flexibility, and endurance
  - ✓ Appropriate use of medications
  - ✓ Communicating effectively with family, friends, and health professionals
  - ✓ Managing depression
  - ✓ Breathing exercises
  - ✓ Relaxation techniques
  - ✓ Yoga and meditation
  - ✓ Mindfulness-based interventions
  - ✓ Healthy eating habits
  - ✓ Making sound decisions about your health
  - ✓ How to evaluate new treatments

- Addressing the Mental Health Issues
- Positive Psychotherapy or Positive Psychology Interventions
  - Acknowledging the positives
  - Positive writing-three blessing exercises, gratitude letter, best positive selves, benefit finding,
  - Writing Selves diary
  - Benefit finding
  - Doing three acts of kindness
  - Writing about personal strengths and using them
  - Writing forgiveness letter, forgiveness
- Mindfulness and spiritual interventions
- Religious-based interventions: Participation in religious practices & conglomerations

Conclusions

The management of chronic illnesses should not focus only on symptom amelioration and pharmacological management, but should involve providing holistic care to improve the well-being and QoL. This may include engaging a multidisciplinary team from different specialties to enable the patient to practice various interventions to improve their well-being. One of the well-known strategies consists of a self-management program. All hospitals should attempt to develop this kind of program. Additional methods that have been shown to improve the health outcomes of patients with chronic illnesses include health education, health promotion, addressing mental health issues, and practicing positive psychotherapeutic interventions, including those focusing on spirituality.

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Title: Promoting Sexual Wellbeing

Running Title: Promoting Sexual Wellbeing

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Promoting Sexual Wellbeing

Abstract:

Sexual wellbeing is an concepts that includes various components like individuals sexual health, sexual pleasure of self and in context partnered sexual activity, aspects related to sexual quality of life and sexual justice in relation to larger sociocultural, human right and legal perspective. The above components are closely interrelated and overlapping. A developmental perspective of sexual wellbeing is useful in conceptualizing and planning implementation of strategies related to policies, programs and legislations. Several aspects like provisions of comprehensive sex education, prevention of sexual abuse, promotion of sex positive culture, addressing sexual myths and having adequate provisions for service delivery for the individuals experiencing problems in sexual domain are important key components in promotion of sexual wellbeing in general. The article also discusses components which promote healthy and mutually pleasurable sexual relationship in a couple context. Important human right and legal provisions in Indian context are also discussed in relation to sexual health.

Key words: Sexual health, wellbeing, promotion, sexuality, India, human rights, legal, law

1. Introduction

The fundamental drive behind most feelings, thoughts and behaviour is Sexuality. Sexuality defines the way an individual projects himself psychologically and socially and it is determined by genetic, anatomical, physiological and other biological characteristics as well as sociocultural factors. Interpersonal relationships and developmental experiences also shape individual sexuality in a significant way. Sexuality includes the gender identity of a person, internal sexual representations including private thoughts and fantasies as well as manifest behaviour with self and others. Our sense of humour, way of dressing

and way of talking are all influenced by sexuality. Sex defines who we are. Holy books of many religions attempted to address the concept of sexuality. Neuropsychologist Karl Pribram described four drives which motivate us to accomplish our goals. These drives included feeding, fighting, fleeing and sex. Physical and psychological health essentially needs these drives. Sex is still relatively less understood and less studied drive. [1]

The history of human sexuality is as ancient as human history. Artefacts from some of the ancient cultures are thought to be fertility totems. A Hindu epic Kama Sutra(400 BC–200 BC), describes love, pleasure and desire. Torah, Quran and Bible also have rules, advice and stories about sex. Scientific studies on sexuality started only a hundred and fifty years back. Henry Havelock Ellis, a British physician used case study methods to study sexuality scientifically.[2] He emphasised sexuality of homosexuals is different from transgenders. He also advocated equal sexual rights for women. Sigmund Freud, the father of Psychiatry, linked sex to healthy development and recognised sexuality throughout life. Alfred Kinsey who is recognised as the father of modern sexuality research believed that most sexual knowledge is guesswork and unbiased scientific literature about sexuality is scarce. [3,4]. Although a lot of research studies have been conducted and attention has been given to sexuality in recent years, scientific information is still insufficient in several domains.

2. Sexual Health

The term sex is used in several different ways in different contexts. Sex describes the means of biological reproduction. Sex also describes sexual organs both internal and external defining an individual as male or female. World Health Organisation has defined sexual health as “a state of physical, emotional, mental, and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Human sexuality emerges in the body, but, like other human phenomena, it simultaneously unfolds in mental landscapes, social relations, and cultural spheres. Sexuality is closely linked to personal integrity, identity, body image, bonding, and social curiosity. Physiological and psychosocial determinants contribute significantly to sexual health.”

The mere absence of sexual dysfunction is not considered sexual health. The sexual health is often reflected as normal sexual behaviour. The normal sexual behaviour is defined as having experiences that are pleasurable for oneself and one’s partner and may or mayn’t involve sexual intercourse. The behaviour is

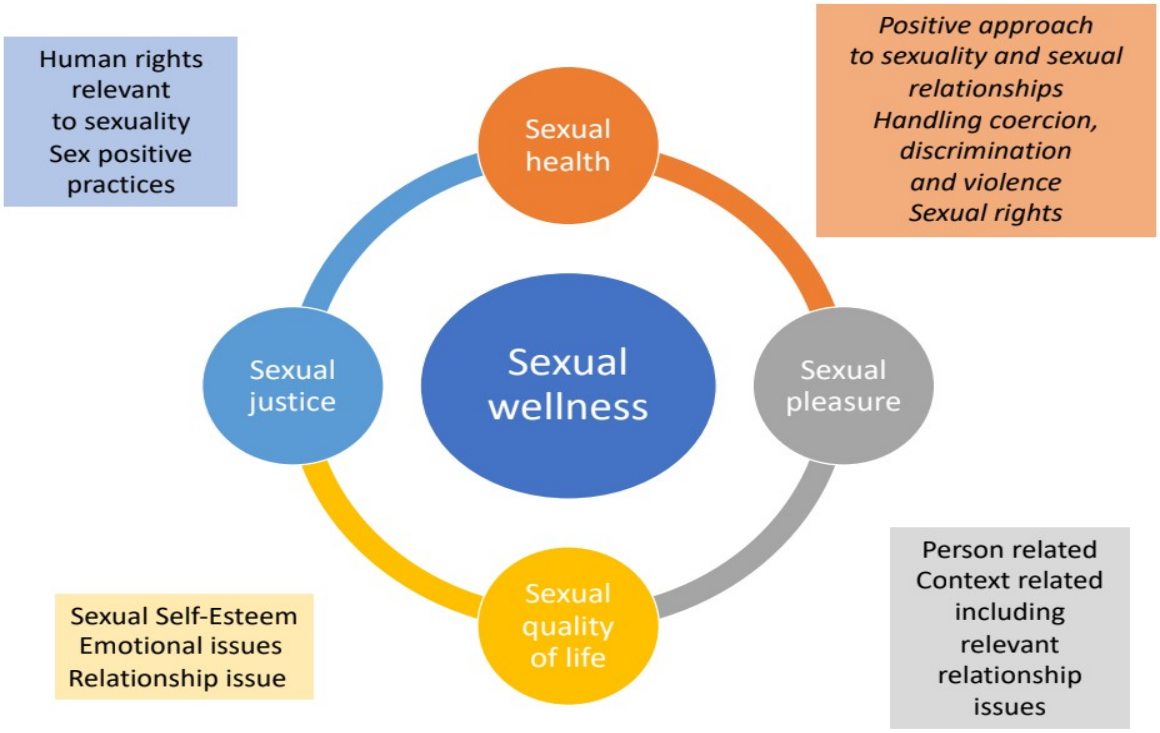
also free from guilt, compulsion or distress. The concept of normal sexual behaviour is also significantly influenced by social and cultural factors. Sexual health like any other health is multifactorial and contextual [5].

Table: 1. Core concepts related to sexual wellness

Sexual health	***Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled. (WHO, 2015)***
Sexuality	*Sexuality is a central aspect of being human throughout life; it encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological,*

	psychological, social, economic, political, cultural, legal, historical, religious and spiritual factors. (WHO, 2015)
Sexual wellbeing	*Sexual wellbeing is a broadly conceptualized as a broader concepts consisting of sexual health, sexual pleasure, sexual quality of life and sexual justice.*

Figure 1. Components of sexual wellbeing



3. Gender and sexual orientation

Gender represents the sociological and psychological representation of biological sex, which includes gender roles as well as gender identity. Though sex and Gender are important aspects of a person's identity, it does not convey anything about orientation. Orientation refers to a person's sexual attraction to others. A person's capacity to arouse interest in others refers to sexual

attraction. An individual must be comfortable with their sex role and chosen gender and accept themselves without guilt, shame or fear and should be able to maintain good relationships with both sexes, regardless of whether they are intimate or platonic.[6] Gender equality includes concepts related to equal access to resources including material resources money, clothes, books, etc. and non-material resources like love, care and attention as well as opportunities in education, occupation, economic pursuits as well decision making for their life. Gender sensitization is the teaching of gender sensitivity, appropriate behaviour and language modifications, gender equality as well as elimination of gender discrimination. This aims at understanding, evaluating, challenging and eliminating bias in gender role, and stereotypes. The awareness, training and implementation of appropriate strategies for upholding gender equality and incorporating gender sensitization is useful in promoting sexual wellbeing.

Table: Strategies to promote gender equality and gender sensitization

4. Attitude towards Sex

Sexuality and general health are associated in diverse and intricate ways, they can interact both in positive and negative ways. Culture plays a significant role in determining individuals' attitudes towards sexuality. Beliefs about normal and deviant sexual behaviour are majorly influenced by culture. Concepts related to sexuality and gender are changing rapidly across the globe owing to rapid globalization, information technology advances resulting into enhanced dissemination of information and ideas. Traditionally, Culture have be broadly classified as sex-negative and sex-positive cultures. India and the Asian subcontinent were considered Sex negative culture where sex was considered majorly for procreation. Western countries which were considered sex-positive culture considered sex beyond procreation.[7] Contemporary world is much more globalised and homogenous and previous concepts are only partially correct. However, consideration of sex as taboo subject and unavailability of sex education is still having much influence on attitude of people related to sexuality.

5. Myths about sexuality

A lot of myths and misconceptions prevail about sexuality. In women myths like sex is dirty, sex is sweat only during the second decade, having sex during menstruation is harmful, better sex with bigger breasts, women “no” always convey “yes”, orgasm is a must in all encounters, only vaginal and clitoral sex

leads to orgasm, women never masturbate and sexual desire decreases dramatically after menopause. Myths about male sexuality include erectile dysfunction is incurable, if a man does not get an erection by the mere sight of his partner implies he is unable to perform, masturbation leads to impotence and semen is a special type of cargo.[8] These myths and misconceptions do play a important role in influencing sexual wellbeing of a large section of population. This leads to sexual dissatisfaction, insecurities, poor sexual interpersonal relationships in couple as well as impacts presentation, symptomatology, course and outcome of subjects with sexual dysfunctions. Hence, provision of age appropriate sex education addressing common myths and misconceptions can play an important role in handling sexual wellbeing at public health levels.

Inappropriate depiction of optimal sexuality in popular media and movies like sex is instant, easy and leading to amazing gratification can create unrealistic expectations. Advertisement strategies for several products and services related to sexuality often disseminate wrong and exaggerated expectation of sexuality. Such advertisements are often promoted by individuals or corporations which benefit by promotion of sense of sexual inadequacy in public. The relative unregulated advertisement and health service sector in sexual medicine is responsible for continuation of several sexual myths and misconceptions in society.

6. Assessment of sexual wellbeing and sexual quality of life

Table: Tools to assess sexual wellbeing and sexual quality of life

Scales - Sexual Wellbeing	
Short Sexual Well-Being Scale	Two versions, 5 items and 7 items are available
Female sexual wellbeing scale	17-item, Good psychometric properties
Multidimensional Sexual Well-being Scale for Older Adults	Short self-report scale, 5 dimensions
Male Sexual Health Questionnaire (MSHQ)	25-item questionnaire, excellent psychometric properties
Scales - Sexual Quality of life	
The sexual quality of life-female (SQOL-F) questionnaire	18 items, focuses on sexual self-esteem, emotional and relationship

	issues
The Sexual Quality of Life Questionnaire-Male (SQoL-M),	Short 11 items questionnaire,

7. Promotion of sexual well-being across ages

6.1 Children and adolescents

Children and adolescents have unique needs for sexual health owing to their physical maturity, cognitive capabilities, and sociocultural factors. To become healthy adults with appropriate sexual functioning, children and adolescent would ideally need comprehensive education related to sexual and reproductive matters, freedom from any sexual coercion, and avoidance of inappropriate and premature exposure to sexual content. Aims of sexual wellbeing in children and adolescents include enabling them to make developmentally appropriate sexual choices, responsible sexual behavior at individual and community levels as well as morally and socioculturally appropriate attitude and outlook towards sexuality. Hence, policymakers and health professionals have always considered comprehensive sex education (CSE) as an important tool not only to promote sexual health and well-being but also the social, emotional health, and academic output of young individuals.

Studies have reported that implementation of CSE in school settings helps to improve understanding of gender and gender norms, more considerate attitude towards sexual diversity including LGBTQA population, improves knowledge and skills to handle healthy relationships including reduction in interpersonal violence and dating as well as having awareness and strategies to prevent child sexual abuse .[(9)]

6.2 Older people

Although it is widely believed that sex and sexuality are no longer important for older adults, several research studies reported contrary findings. Sexuality continues to be an important aspect of quality of life even in older adults . However, there is a wide variety of inter-individual diversity in the amount of importance given to sexuality in later life. Clinicians need to be aware of and acknowledge this variability along with offering advice, help, and treatment to those who are seeking help with sexual difficulties. The expression of sexuality in older adults is influenced by age-related limitations imposed by bodily

functioning, medical factors as well sociocultural concepts of sexuality norms about older adults. Active sexual life has also been useful in helping with better mental and physical health, improving life span, strengthening relationships, and reducing stress and tension. Several strategies to promote healthy aging are also helpful in the promotion of sexuality in this population.

Following are the important approaches that can be helpful in having better sexual health in older adults.

Accepting and acknowledging age-related changes- Changes in sexual abilities in later life are inevitable. However, it is not necessarily lead to reduction of enjoyment and pleasure in this activity. Many older adults can continue to enjoy sex in later life at a younger age or even better. Appreciating changes that come with aging is useful. Increasing age is one of the most important predictors of sexual dysfunctions in both genders. However, acknowledging and accepting age-related changes helps in developing skills to navigate around it and do necessary modifications. An enhanced focus on intimacy and physical touch is beneficial. Expanding the repertoire of sexual acts from intercourse to touching, kissing, massage, masturbation or oral sex can be rewarding, if not already included. Keeping better physical health, having better sleep, regular exercise, healthy diet are other generally helpful approaches. It is useful to encourage interested older adults to seek medical help for issues related to sexuality influenced by medical conditions and medications.[10]

8. Sexual wellbeing

7.1 Gender rights

Sexual health also includes certain aspects of reproductive health like fertility control, prevention of STDs , prevention and management of sexual violence and having pleasurable sexual experiences free from violence. The achievement of sexual well-being is closely associated with people’s human rights like right to non-discrimination, right to privacy and confidentiality, to be free from violence and coercion and right to education and information regarding sexual health services. Important bodies have been established to look into gender rights which include United Nations human rights treaty, United Nations Special Rapporteur on the Right to the highest attainable standard of health, among others. Harmonizing the laws related to sexuality with human rights standards helps in promoting sexual health. However, many laws have a negative impact on sexuality related human rights, for example restricting the access of

adolescent girls to sexual health services can lead to unsafe abortion practices. Removal of legal and regulatory barriers to sexual health is an essential part of sexual well-being. As sexual health is related to private lives of people, confidentiality and informed decision making is very important. For example adolescents may not seek help in case permission is required from parents or legal guardian to access sexual health services. Access to information and education regarding sexual well-being has been strongly supported by international human rights associations. Ability to express one's gender freely and without any discrimination is an important part of health and sexual well-being. Sexuality related violence does have a negative impact on health and well-being. An important aspect of laws related to sexual health is the definition of rape. Rape by husbands and issues related to trans-gender individuals needs to be looked into to uphold human rights of individuals. [11]

7.2 Human Rights

Sexual health is strongly linked to the weightage given to human rights of individuals. Sexual rights include human rights many of which are already a part of national and international human rights associations. The application of human rights to sexuality and sexual health constitute sexual rights. The application of human rights to sexuality and sexual health constitute sexual rights which have been elaborated in table below.

Table: 2. Human rights important to uphold sexual health

The right to equality and non-discrimination	***There should not be any distinction based on race, colour, sex, language, religion, political opinions, place of residence, birth, property, disability, marital status, sexual orientation or gender identity and economic or social position of the individual.***
The right to life, liberty, autonomy and security	*These rights cannot be taken away for reasons related to sexuality including sexual orientation, consensual sexual practice or gender identity.*
The right to bodily integrity	*Everyone has the right to control and make decisions regarding their sexuality. This includes choices of*

	sexual behaviour and relationships with due regard to rights of others. Free and informed decision making by obtaining free and informed consent before an investigation or procedure related to sexual medicine is done.
The right to be free from torture and cruel, inhuman or degrading treatment	*Certain harmful traditional practices related to sexuality, gender identity, sexual orientation, forced sterilization or abortion are to be avoided.*
The right to privacy	*All individuals have the right to withhold information related to their sexual practices, gender identity, sexual relationships or sexual partners.*
The right to highest attainable standard of health and social security	*Includes satisfying, safe and pleasurable sexual health experiences. This requires access to quality health services and conditions that determine sexual health.*
The right to marry with free consent of the spouses, right to equality and in the dissolution of marriage	*Everyone has the right to choose whether to marry or not and enter into marriage or relationship with free consent. All individuals will have equal rights while entering, during and at dissolution of marriage. Also there will be equal entitlements to social welfare and other benefits regardless of the type of relationship.*
The right to decide the number and spacing of children	*For exercising this right, access to the conditions that influence sexual health and reproductive health services is required.*
The right to information and education	*Everyone has the right to access correct scientific information related to sexuality, sexual health, law and sexual rights. Everyone has the right to comprehensive sexuality education.*
The right to freedom	*Every individual has the right to express their*

of thought, opinion and expression	*sexuality in terms of general appearance, communication and behaviour.*
The right to an effective solution for violation of fundamental rights	*Everyone has the right to access to justice and redress for violation of their sexual rights. This requires adequate, accessible and appropriate educative, legislative and judicial measures.*
The right to freedom of association and peaceful assembly	
The right to participation in public and private life	*Free and effective participation in and contribution to civil, economic, social , cultural and political aspects of human life at local, national and international levels.*

8 Sexual wellbeing: Risk awareness about Sexually transmitted diseases (STDs)

More than one million sexually transmitted infections (STIs) are acquired daily. STIs can have serious consequences apart from the infection which they cause. They have a negative impact on sexual well-being sexual health and reproductive health of individuals. More than 500 million people aged 15 to 49 years suffer from genital herpes infection. HPV (Human Papilloma Virus) is linked with 3,11000 deaths each year due to cervical cancer. Hepatitis B virus lead to approximately 8,20,000 deaths in 2019 mostly as a result of either cirrhosis or hepatocellular cancer.

- In spite of considerable efforts, change in behavior to prevent STIs is a challenge. Information and counselling can bring a positive change in individuals.
- Lack of public awareness, lack of training among health care workers and stigma related to STIs remain a barrier to timely and effective treatment.
- People seeking health services for screening and treatment of STIs often face problems due to inadequate resources and poor quality of services.
- Subgroup of populations with highest rate of STIs including sex workers, LGBTIQ individuals(Lesbian, gay, bisexual, transgender, intersex and queer) ,

injectable drug abusers and prisoners do not have access to adequate health services.

☂ STI services are usually underfunded leading to inadequate manpower, resources and infrastructure.

Within the framework of “Global health sector strategy on HIV, Hepatitis and STIs, 2022-2030” WHO (World Health Organization) has certain goals as briefed in table X2.

Table 3- Global health sector strategy on HIV, Hepatitis and STIs, 2022-2030”:WHO

a) Develop targets, lay down norms and standards for STIs prevention and management.
b) Support economic burden due to STIs and improve STIs surveillance.
c) To foster research related to STIs including development of diagnostic tests, vaccines and effective treatment options.

WHO supports all countries to:

- Develop strategic plans and guidelines related to STIs.
- Create a healthy environment where individuals can discuss about STIs and seek treatment.
- Primary prevention and integration of STI services with primary health care services.
- Make STI care people centred and adoption of point of care tests.
- Upgrade health interventions for STI surveillance in priority populations and management.

9 General public health strategies to promote sexual wellbeing

Sexual well-being is important as a public health measure. However, there would be some resistance to considering sexual health as a public health measure and more so in traditional and conservative societies. Mitchell KR, Lewis R 2021 There might be limited resources to cater to sexual health of individuals. Political resistance to considering sexual wellbeing as part of public health is likely to make things more difficult. In countries like the United Kingdom (UK) a holistic approach to sexual health is followed which embraces the idea of sexual well-being.[13]

The ways in which sexual well-being is highly relevant to contemporary public health are elaborated in table X3.

Table 4: Relevance of sexual well-being to contemporary public health

(i) Sexual well-being as a marker of health	**Sexual well-being is a marker for population well-being. A positive approach towards population well-being helps in establishing achievable and measurable goals towards health equity. The inequities related to sexual health include racial, ethnic or immigration based discrimination, gender or sexual identity based violence and sexually transmitted infections (STIs) including HIV. A sexual wellbeing approach recognizes this discrimination across generations which focusses on the need of marginalized people. Hence population based health strategies need to be developed which are anti-oppressive, intersectional and culturally sound. Prather C, Fuller TR 2018 Mitchell KR, Lewis R 2021**
(ii) Sexual well-being as an indicator of well-being in the population	Population well-being is an ambitious goal of public health and sexual well-being is an important part of overall well-being. Sexual well-being gives us an important insight into holistic well-being across the life span. Data on sexual well-being will add to community engagement in health issues, address health (structural determinants) at the local level, and link local and larger public health policies related to reproductive and sexual health. Mitchell KR, Lewis R 2021 La Placa V, Knight A 2014
(iii) Sexual	Sexual well-being incorporates population trends which are

well-being as a marker of population trends	distinct from sexual health interventions. Sexual health is linked to well-being in the broader sense. For example a National survey done in France between 1970s to 2006 the proportion of people for whom 'sexual intercourse is important to feeling good' increased from 48% to 60% in females and 55% to 69% in males. Bajos N, Bozon M 2010
(iv) Sexual well-being helps in refocussing the practices of public health	Sexual well-being is an experience felt in the context of the surrounding environment. Dooris M, Farrier A 2018 Hence, it can be used for public health innovation strategies. Monitoring sexual well-being at the community level challenges the notion that sexuality requires privacy. Public health surveillance is there for sexual health and adding sexual well-being to it refocuses such surveillance. We should focus our resources on the population which is in greatest need and track individuals who enter and exit such policy programmes. This approach requires that we redefine the relationship between community and public health to build trust and maintain privacy. Haley DF, Matthews SA 2016

Sexual well-being is a distinct entity from sexual health and integration of both is essential for addressing sexual inequities. The conceptualization of sexual well-being is similar to sexual health and pleasure and to socio-cultural and political frameworks of sexual justice. Inclusion of sexual well-being to sexual health is very much possible but would require additional data-driven approach and certain objectives.

10 Promoting sexual well-being in healthy couples

Sexual well-being in couple context is one of the key aspects of a romantic relationship. Keeping physical intimacy and sexuality active in the relationship strengthens and enriches the relationship. There are several strategies for committed healthy couples to keep their sexual life robust.

Important skills are enumerated below.

1. Communication- Good ongoing communication in couple relationships is an important aspect of maintaining good intimacy. Most couples find it difficult to talk about sex without hesitation. Discussions on sex-related topics may be

influenced by shame, embarrassment, guilt, and feeling of hurt or resentment in one or both the members of the couples. Improving communication about sexuality can be very useful in this regard. Increasing spending quality time with one another helps in easing communication about sensitive and intimate issues. Expression of positive feelings like appreciation, respect, love, and approval often and freely helps in developing an appropriate context for discussing other issues. Selecting an appropriate time for discussion related to sexuality is helpful. Avoid blame, mistake finding, and holding someone responsible for perceived or real difficulties. Using humour appropriately and sensitively is valuable.

2. Improving relationship strength- A strong and close relationship is the backbone of the good sexual well-being of the couple. Investing time, energy, and resources in improving intimacy are rewarding to the couple. Making active efforts to spend quality time together, making attempts to share hobbies and interest, or positively appreciating the hobbies of another partner if it is not shared. Sharing workload, having a fair distribution of responsibilities, and helping each other in daily chores can be another strategy to feel more connected, cared and emotionally close. Making some extra efforts to keep the romance alive like bringing flowers without an important occasion, planning “date night” with partner alone, visiting places of mutual interest, cooking or bringing food of your partner's choice, making and giving love notes to each other unexpectedly are some of the strategies that can be considered according to taste on oneself and one's partner.

3. Sexual well-being is closely related to physical health and fitness. Regular physical exercise especially cardiovascular exercise is protective of sexual dysfunctions in both men and women [20.21]. Aerobic exercise has been reported to improve erectile dysfunction in a large systemic review report .[22] Similarly, physical exercise has been reported to improve sexual functioning in women specifically in two groups i.e. women being treated by antidepressants and women who have undergone hysterectomy .[23]Several mindfulness based and cognitive strategies have proven efficacy in the management of sexual dysfunctions in both genders .[24]There are also indications that learning and utilizing the principles of these strategies can have a promotional impact on sexual functioning. Routinely practicing pelvic floor muscles exercise improves sexual fitness in both men and women.

4. Other general strategies- Smoking, alcohol, and other substances can impair sexual functioning and general health. Hence it is not prudent to use them. Eating healthy food with lots of fresh fruits, vegetables, and a balanced diet is promotive of sexual health. Avoid high fat, high salt, and unhealthy dietary pattern. The dictum “use it or lose it” also applies to sexual well-being. Hence, maintaining regular sexual activity is useful for couples as a healthy aging strategy.

5. Improving sexual pleasure and interest- Bringing some novelty and variation in sexual domains by couples can keep sexual pleasure and interest high. Increasing the repertoire of sexual positions, additions of sexual toys if both partners agree and are comfortable with it, places, and timings can bring an element of newness to sexual activity and can be helpful in the enhancement of sexual wellbeing. Adding some safe, morally, and legally acceptable adventures, like new places, the addition of written or visual erotic material, sexual undergarments if the couple has not used them earlier etc. can be incorporated if both partners are agreeable to the same.

6. Prevention of intimate partner violence- Intimate partner violence (IPV) is an important issue pertinent to sexual health. A higher prevalence of Physical and sexual IPV is reported in South Asia (35% and 19% respectively) in comparison to North America (25% and 6% respectively) (WHO, 2021). In the Indian context, IPV remains an important public health issue. In India, women experiencing domestic violence have reported 41% and 30% lifetime and past 12 months’ prevalence respectively .[25] Physical violence, sexual violence, psychological aggression, controlling/coercive behaviors, stalking, etc are common forms of IPV experienced by people. IPV is a significant risk factor for health conditions in general and sexual health in particular. Women experiencing IPV have more medical, gynaecological, reproductive, and sexual health and stress-related symptoms in comparison to controls. Strategies aimed at the reduction, identification, and handling of clients affected by IPV are important public health strategies for several health indicators including sexual health.

Table: 5. Components of strategies for enhancements of optimal sexuality in context of partnered sexual activities

• Establishing meaningful relationship with partner • Ongoing healthy and open communication about sexuality

- Having intimacy
- Having good physical fitness
- Appropriate management of medical illnesses and selection of medications having least negative impact on sexual functioning
- Avoiding substance use i.e nicotine, alcohol and other substances
- Putting efforts for enhancing sexual pleasure and interest by using novelty, variations, utilising contextual and interpersonal factors
- **Avoiding and handling adverse relationship events including intimate partner violence**

11 Sexual well-being in special population

11.1 Mental health conditions

In patients suffering from psychiatric illnesses like schizophrenia, bipolar disorder, depression or anxiety just to name a few, the occurrence of sexual dysfunction is very high. Psychotropic medications often worsen sexual dysfunction. In severe mental illnesses like schizophrenia, sexual dysfunctions can occur as both, a part of the illness and also due to psychotropic medications. [(26)]In mood disorders like depression the reported prevalence of sexual dysfunction is around 70-80%. Depression has an inverse relation with the sexual response cycle. Various neurotransmitters as well as pathways contribute to sexual dysfunctions in depression.[(27)]Anxiety disorders also have higher sexual dysfunctions. Premature ejaculation is more in patients suffering from anxiety disorders. Other anxiety disorders like social phobias are also associated with decreased sexual satisfaction as well as sexual satisfaction.[(28)] Sexual dysfunction is more common in Bipolar disorders. Factors like the phase of the illness, and medications used, affects all the phases of the sexual response cycle.[(29)]

11.2 Substance abuse disorders

The mind-altering drugs in different cultures can be traced back thousands of years and the same holds good for drugs that could increase sexual functioning. The consumption of alcohol usually precedes sexual activity and is commonly believed to be an aphrodisiac. Alcohol consumption can indeed act as a disinhibitor hence leading some people to be more receptive. This helps in the myth that alcohol can enhance sexuality. Acute effects can interfere with erection, lubrication as well as orgasm. The mechanism of alcohol-induced sexual

dysfunction is related to the hepatic catabolism of testosterone and its conversion, mediated by the enzyme aromatase. Tobacco being a potent vasoconstrictor, can cause erectile dysfunction 1.5 times more than non-smokers. Cannabis use has a history of many centuries. Many marijuana users perceive it has a beneficial effect, but its impact on long-term use on sexuality is unclear. In the initial stages of opioid use, some patients experience an improvement in sexual function. Seventy-one per cent of men and sixty per cent of women report worsening of their sexual function. Another nervous stimulant drug cocaine appears to have two opposite effects on sexuality according to its acute and chronic abuse. The dopaminergic effect of cocaine can augment desire and arousal but orgasm will be inhibited. Regular and long-term use of cocaine either through smoking/snorting/injecting has a significant negative impact on sexual functioning. Highly addictive drugs like amphetamine have gained a reputation to increase sexual desire as well as orgasm. There have been reports that methamphetamine users participated in sexual activities which they did not when they were sober. There is a strong association between amphetamine use and high-risk sexual behaviour. Ecstasy is believed to be a ‘love drug’, though many people report an increase in sexual satisfaction, cases of priapism have also been described. In the case of polydrug use, there is a possibility of unexpected and reciprocal interactions and also an association of illicit drugs with benzodiazepines. Benzodiazepines cause drowsiness which in turn reduces desire and also in certain doses, they can be disinhibitors and may increase libido. In the recent past lay and scientific press has raised awareness of the involvement of licit and illicit drugs in the crime of ‘date rape’. It is usually a combination of flunitrazepam, gamma-hydroxybutyrate and ketamine. When mixed with alcohol(spiked drink) produce disinhibition and lasting anterograde amnesia making the victim an unreliable witness.[30] There is ambiguity about the causal association between drug use and high-risk sexual behaviour. Some studies found that high-risk sexual behaviour was neither entirely specific nor general with drug use, while others found an association between the decreased likelihood of condom use and drug abuse.

11.3 Cognitive impairment and sexuality

An older study which was done on the elderly population without any impairment, showed 33% of the population was involved in sexual activity, while 40% reported that they still had sexual interest. There are varied findings

regarding the association between sexuality and cognitive functioning. A study done among menopausal women did not show any association between sexual functioning and cognitive decline. An Italian study showed subjects who continued sexual interest or activity had better cognitive functioning. Another study which found the prevalence of minimal cognitive impairment in the range of 3- 20% found that only one-third of cognitively impaired individuals had sexual activity when compared to 62.3% of the healthy cognitive group. This study revealed minimal cognitive impairment and significantly impaired sexual functioning. The factors that contributed for the sexual decline in these individuals include organic, relational and comorbid medical conditions. Organic changes include vasculopathy, neuropathy, decrease in sex hormones and erectile dysfunction.[31]

Relationship factors include bereavement and role transition from caregivers to the care receiver. Comorbid medical conditions include diabetes, hypertension and depression. The use of prescribed medications like anticholinergics, and antipsychotics can cause impotence and impaired ejaculation. One of the studies reports the importance of abstract thinking in maintaining intact sexual relationships in cognitively impaired individuals. Sexual disinhibition is reported in around 7% of the reviewed literature.[32]

11.1 Sexual perspectives in the LGBTQ population

Historically gender identity was viewed as a deeply felt identification of being female or male. In the recent past gender identity is seen as a spectrum where femaleness or maleness are part of a whole gamut of lesbian, gay, transgender and queer. Transgender individuals have more body dissatisfaction and negative body image compared to cisgender individuals. Cisgender males have more frequent and intense sexual desire when compared to their female counterparts. Gender-affirming treatment decreases sexual desire predominantly among females and the main culprit is hormonal therapy. In contrast, transgender males report increased sexual desire after the initiation of hormonal therapy. Low doses of phosphodiesterase inhibitors are required to maintain adequate arousal in transgender females with intact penis. In transgender females with a neovagina, following erotic stimuli subjective arousal and subsequent vaginal activity and vaginal blood flow comparable to cisgender is observed. Satisfactory arousal is observed six months post-surgery. A large number of transgender females with vaginoplasty report satisfactory orgasms, but easier with masturbation than with

partner sex. When compared to pre-surgery orgasm is smoother, more pleasurable and long-lasting. Interestingly transgender females do report ejaculation with orgasm though the anatomical correlation is not clear.[33] Orgasm rates are less in transgender males when compared with transgender females. Orgasm rates range from 25% to 100% both in vaginoplasty and metoidioplasty. Fear of damaging the newer organ is common after gender-affirmative surgery, which may lead to muscle tension. Muscle tension may cause pain during coital activity, which in turn may lead to lower sexual satisfaction. Those who were sexually active before gender-affirmative surgery remained the same even after surgery. Gender-affirmative treatment has been shown to improve satisfaction with a partner.[34]

11.5 Neurodevelopmental disorders

Various environmental and genetic factors have increased the prevalence of neurodevelopmental disorders. Understanding sexual development and difficulties are an integral part of holistic care. Individuals with neurodevelopmental disorders are more influenced by sociocultural practices, belief systems, ethnic practices and social stereotypes. Individuals with neurodevelopmental are able to hold positive sexual identities and can be aware of their sexual potential. Many studies have a persistent theme where these individuals distance themselves and show ambivalence towards their sexuality. On one hand, they are viewed by caregivers as needing protection from sex and they are “asexual” while on the other hand, they are viewed as “hypersexual” behaving inappropriately. There is always an internal battle among the intellectually disabled as they are prevented to act on their desires. More are kept away from sexuality as a means of protection, which makes them inexperienced, dependable as well vulnerable. Sexual orientation in this group is seen as heterosexual by default. It is noteworthy that in high-functioning autism higher rates of homosexual and bisexual orientation in the range of 15-35% when compared with controls. They have inaccurate knowledge about sexuality, intimacy and reproductive health.[35] Most of their concepts of sexuality are compromised by myths and need-based understanding. Many believe sex is aggressive and avoid it. Physical as well as developmental disability impacts sexual development, which in turn leads to lower self-esteem. Lower self-esteem further contributes to confusion about their sexual and reproductive abilities. Autistic individuals had less sexual knowledge and had difficulties in sexual

experience. The majority of individuals with intellectual disability had a desire to be in intimate relationships. Being in a relationship made them happy, confident and independent and also provided a sense of security. Many individuals express intimacy through kissing, and hugging but did not engage in intercourse.[36]

11.2 People engaged in sex work

The commercial sex work and allied activities are criminal and severely restricted. The stigma, discrimination and criminalization leads to limitations in the access of the care for sex workers due to fear of being denied for care, prosecution, arrest and imprisonment. Even sex workers when access to health service don’t disclose the complete information hence receive inadequate treatments and follow-up. The sex workers sexual health influences sexual health parameters of consumers and other affiliate person in society. Availability of better access to education, service and other provisions will help in promoting sexual wellness not only among sex workers but other persons in community too.

12 Legal determinants of sexual health

Legal mechanisms are crucial in introducing health intervention, protecting human rights and guaranteeing promotion, protection and provision of sexual health information and services. Laws also helps in preventing discrimination, alienation and marginalization of people based on sexuality and gender. Legal statutes are necessary to combat archaic social positions on sexuality and for protection against bigotry and violence. Complete discussion of the each topic is beyond the scope of the current guidelines. An overarching overview has been provided here.

12.1 Sexual abuse

Childhood sexual abuse (CSA) is a serious issue and is a significant concern for promotion of health in general and sexual wellbeing in particular of individuals in society. CSA encompasses sexual harassment, commercial exploitation, sexual assault, penetrative sexual acts, non-penetrative sexual acts, and pornography among others. In addition to various adverse medical and social consequences in the immediate aftermath, CSA eventually results in adverse physical and mental long-term consequences if the environment is not conducive to healing. Developing a society having safe and healthy developmental environment that is free from sexual exploitation is mandatory in healthy development of children

and adolescents. Hence, the Protection of Children from Sexual Offences (POCSO) Act 2012 was passed in India.

12.2 Gender based sexual violence

Rape, sexual assault, sexual harassment, stalking are the important gender based sexual violence reported. Prompt identification, reporting, legal remedies and prevention of such events are prime factors in promoting sexual well-being of the people in country. Several related laws are made in India to safeguard persons vulnerable for gender based sexual violence. The table is further enumerating relevant laws related to this issue.

12.3 Homosexuality

Sexual minority people have several challenges in having sexual wellness owing to discrimination, stigma, lack of access to education, and access to health care. The relevant laws are mentioned table.

Table: 6. Important legal provision in relation to promoting sexual well-being in India

The Protection of Children from Sexual Offences (POCSO) Act 2012	This is an Act to protect children from sexual offences, harassment and pornography. It is a strong and empirical legal framework for the protection of children from sexual offences.
The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013	An Act to provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment
Transgender Persons (Protection of Rights) Act, 2019	An act of the Parliament of India with the objective to provide for protection of rights of transgender people, their welfare, and other related matters.
Invalidation of part of Section 377 of the Indian Penal Code	Decriminalization of sexual act between same sex persons
National Legal Services Authority v.	In 2014, the Supreme Court in this

Union of India (2014)	landmark case gave legal recognition to the 'third gender.'
National Medical Commission ban on conversion therapy	On August 25, 2022, National Medical Commission (NMC) designating conversion therapy as "professional misconduct", and authorised State Medical Councils to take disciplinary action if the guideline is broken
Provisions of Indian Penal Code • Section 375 of the Indian Penal Code • Section 354A • Section 354B • Section 354C • Section 354D	 Defines rape and various related terminology Sexual harassment Forcing a woman to undress Watching or capturing images of a woman without her consent (voyeurism) Following a woman and contacting her or trying to contact her despite her saying she does not want contact. Monitoring a woman using the internet or any other form of electronic communication (stalking)

13 Comprehensive Sexual Education (CSE)

Sex education is defined as a broad program that aims to build a strong foundation for lifelong sexual health by acquiring information and attitudes, beliefs and values about one's identity, relationships, and intimacy. Comprehensive sex education is essential in development and promotion of sexual wellness of people. Sexual and reproduction health needs of the children and adolescents are traditionally ignored in India. There are several cultural challenges in wide availability and dissemination of the sex education as sex is considered the taboo subject in India. It has been shown that provision of CSE might result in multiple benefits to the recipients including delayed initiation of sexual activity, a reduction in unplanned and early pregnancies and their associated complications, fewer unwanted children, reduced risks of sexual

abuse, greater completion of education and later marriages, reduced recourse to abortion and the consequences of unsafe abortion, and a curb of the spread of sexually transmitted diseases including HIV.

14 Health services for people experiencing difficulties in sexual domain

Availability of good quality and accessible health services is an important aspect of the maintaining sexual health promotion. The health service related to sexual domain can be available in different sectors of health like in medicine, gynaecology, psychiatry, venerology, endocrinology, surgery and plastic surgery etc. Services including identification and treatment of sexual disorders and dysfunctions, services for abortion, contraception, STI prevention, testing and treatment. The provision of services should be easily accessible and practical for a wide ranges of service seekers including people from sexual minority groups.

15 Mass media, information technology, entertainment industry and sexuality

Sex and sexuality are a significant part of discourse of mass media, information technology, entertainment industry. Sexuality and these industry affect each other in mutual ways. Although people of all age are affected by information and depiction of sexuality in these mediums, children and adolescent are possible most influenced by it. A lot of information related to sexuality and sex is derived from media owing to unavailability of reliable information from other trusted resources. Hence there is need to be study influences of these effects on persons in relation to sexual wellbeing. Strategies should be devised to limit the inappropriate and excess exposure of media and pornography in relation to sexuality on people specially in children and adolescents. Specific therapeutic strategies to deal with adverse consequences happened due to inappropriate exposure to media should also be explicit and well planned.

16. Pornography

The easy availability of the internet and access to gadgets has led to an increase prevalence of viewing pornography in community. Porn consumption is done for several different reasons and porn use affects different individual in different ways. This increase porn consumption has led to increased concerns about impact of pornography on sexual development, sexual functioning and dysfunctions. Academic studies have focussed on possible negative consequences of porn consumption. A comprehensive review (2016) on this

subject have reported a significant rise of erectile dysfunctions, delayed ejaculation, diminished libido and reduced sexual satisfaction in men under 40 exposed to high pornography consumption. Although these findings are not very conclusive and contrary evidence about no significant evidence are also existent. Concerns related to problems in sexual and general development have been related to inappropriate and excessive porn use in children and adolescent.

Recommendations

Children and adolescents	• **Strategies to prevent sexual abuse, and coercion** • **Provision of comprehensive sex education** • **Development of environment allowing opportunities to discuss sex related topics and queries with trusted adults like parents, teachers and other family members** • **Provisions to avoid age inappropriate and excess exposure to sexually explicit information**
Adults	• Human rights related to sexuality • Promotion of sex positive environment • Availability of services related to sexual domains which are accessible and approachable
Older adults	• Freedom form abuse including sexual abuse • Provisions of services that allow assessment, testing and management of medical disorders and its impact on sexual disorders as well as specific sexual disorders
Sexual minority	• Freedom form discrimination, stigma and alienation • Freedom of expression of their gender role, sexual behaviours and life choices keeping in mind the sociocultural nuances of the geographical region

	• Provisions of health services that are respectful, approachable and open to specific problems of sexual minority groups
Gender related issues	• Adequate education, information and ongoing training to understand, respect and handling gender equality in family, educations centres and workplaces • Adequate legal provisions to protect sexual rights, sexual abuse, coercion and sexual harassment • Development of program and policies to handle gender equality related concepts in various contexts

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Pornography

Sexual wellbeing of people living away from home, divorced, socially separated persons

Clinical Practice Guideline

ROLE OF MEDIA – SOCIAL, ELECTRONIC, AND PRINT MEDIA FOR MENTAL HEALTH AND WELLBEING

Running title: CPG: Media and Mental Health

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ROLE OF MEDIA – SOCIAL, ELECTRONIC, AND PRINT MEDIA FOR MENTAL HEALTH AND WELLBEING

INTRODUCTION

For the public, the media is a major source of information and misinformation. Even after the digital revolution, newspapers and magazines remain popular and offer an efficient opportunity to convey mental health information to the masses with attached authenticity. Instead of leaving the write-ups on mental health to journalists and individuals from unrelated fields, psychiatrists should actively participate in the process to ensure that the published information is scientifically and culturally valid. In the realm of electronic and social media, where numerous biases, myths, and misconceptions are perpetuated, it becomes essential for psychiatrists to proactively spread accurate information and diplomatically debunk erratic posts. Additionally, considering that inappropriate use of electronic and digital media can lead to diverse mental health issues, psychiatrists should possess expertise in recognizing, managing, and preventing such problems.

WHY COMMUNICATE SCIENCE TO THE PUBLIC?

If we fail to communicate science to the public in a clear and effective manner, they may fall prey to misinformation and pseudoscience. Studies have revealed a high prevalence of stigma and misconceptions regarding mental illness in India. Effective communication about the latest research is also vital to secure research funds and influence decision-making by individuals, organizations, policymakers, and others. However, imperfect educational attempts can lead to misunderstandings. Therefore, it is crucial for those endeavouring to educate the public through diverse media to be aware of the most effective methods to achieve this goal.

GENERAL PRINCIPLES OF EFFECTIVE SCIENCE COMMUNICATION

- Have a SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) objective for each activity.
- Remember that the public may include those who are genuinely interested in the topic, as well as those who have no interest or even opposing views. One should strive to reach all these groups. Some ways to ensure this are by including individuals from the disinterested or opposing groups in your planning team and beta testing your write-up or video on some of them.
- Have one key message and repeat it in different ways.
- When addressing complex issues, try to involve an interdisciplinary team.
- Depending on the audience, besides providing reliable information, also include some details of the research or other mechanisms that led to the facts shared. This would help them make informed decisions regarding the trustworthiness of the information and its sources.
- To effectively communicate a topic, one has to thoroughly understand it oneself.

ELECTRONIC AND SOCIAL MEDIA

Advances in technology have made life easier with respect to education, acquiring information across the globe, entertainment, social connectivity, monitoring one's lifestyle (smart watches), online gaming, and saving time and money required for physical presence. Overall, electronic media like mobile, mobile applications, television, radio, news portal,

websites, etc. and social media (SM) like Facebook, Twitter, Snapchat, YouTube, and Instagram, etc. have resulted in comfort and ease of life at just a few fingertips distance. In an era dominated by electronic media, where technology is omnipresent, it is essential to recognize its potential for promoting mental health and well-being. It can be effectively used for imparting information about mental health conditions and positive mental health, to provide tips for the promotion of mental well-being, educate people across all the ages about mental health and illnesses and to spread information about government programs/policies for mental health and services available.

The Digital India initiative of the government of India and increasing internet penetration in recent years has resulted in India's digital population reaching up to 692 million active users (48.7% internet penetration). This increase is mainly because of the rise in mobile internet use. [1] The active internet use among the population of 12 years and more has increased enormously to reach around 595 million in 2022 (rise by >20%). (The economic times, March 2023) Out of this, the prevalence of SM users is 467 million of the Indian population (32.8%), as reported in January 2023. Research also says that in early 2023, the active mobile users' count reached 77% of the total population. [2] This data is alarming as more the internet users, higher is the prevalence of pathological internet use though it is not clear what exactly the internet users get addicted to. But this can be viewed positively also, as higher the internet use, more is the opportunity to spread awareness about mental health to deeper sections of the country. It can also be used for empowering individuals to enhance their well-being and access support and resources in a digital landscape.

USING DIGITAL MEDIA EFFECTIVELY

Display professionalism: While appearing in video, wear decent clothes and appropriate attire. Carry a smile. Speak to the point. Speak in a simple language appropriate to the intended audience. Convey clear and scientific information in understandable language, preferably using examples and experiences. Never use loose terms or sentences that create doubt in someone's mind. Share recent statistical figures about the topic. It is better to speak about what one is sure about. Anything said in a live program can't be reverted, and it spreads quickly to millions of viewers, so one has to be careful while using words or comments.

During panel discussions, maintaining eye contact with the moderator and other panellists and alternately with the camera will impart a good way of communication on media. Respect others' opinions and views. If one disagrees with the other's perspective, a descent confrontation with a balanced approach and a complete scientific clarification of what one thinks correct is needed. Avoid arguments or proving how the other person is wrong, especially in debates on sensitive topics like suicide.

Counteracting myths and misbeliefs: While debunking a myth is necessary, do it non-judgmentally. Be aware of the cultural aspects of different communities or regions based on which the myths are usually built. Focus should be on minimizing the mental health risk associated with following and practicing the myths rather than proving them wrong. Sometimes psychiatrists have to find a midway of following a myth and prescribing scientifically appropriate advice. It is crucial to explain how myths can harm mental well-being if followed mindlessly rather than just advising not to follow them based on scientific knowledge.

Television: Television is mainly utilized for entertainment and news, but it can be a highly impactful electronic medium to spread mental health awareness. Movies, web series, plays, panel discussions, live programs or any other format can be considered for this.

But how much time one should spend watching television must be regularized. Literature mentions that the amount of time spent on television is directly proportional to the negative view about a mentally ill person. News telecasted or displayed on television should be monitored by government-affiliated mental health professionals, especially for news related to mental health, stress, suicide, or other sensitive topics. There are two theories for the impact of mass communication. First is 'cultivation theory', according to which a person spending more time in the 'virtual world' start perceiving and looking at the 'real world' as per its portrayal in the virtual world. A person watching television excessively may have a television view of mental illness or mentally ill patients. Second is a 'social learning theory' (learning by observation). People may learn how to deal with a person with psychiatric illness as shown on television. These theories can result in the spread of stigma about mental illnesses. Utilizing these theories in reducing the stigma and spreading the right information about mental health is essential.

Radio: Most programs aired on radio are prepared by the working staff with strict control over what message to be spread. There are fewer chances for wrongly portraying mental health, psychiatrists, or psychiatric treatments or spreading false information about psychiatric illnesses. Radio can be an excellent medium to spread mental health awareness and education. Private psychiatrists are already doing an excellent job of guiding people through various programs on the radio. Indian Psychiatric Society or the state and local mental health organizations can utilize this medium for mass education and awareness about mental health and well-being. *Parasparam*, a weekly interactive one-hour live phone-in program with mental health professionals, has been airing on All India Radio Cochin FM for the past 11 years. It serves as a good model that others can assimilate. The only limitation is that the number of radio listeners has decreased in recent years. [3]

Smartwatches/apps: Nowadays, smartwatches are used by most fitness-seeking individuals, especially the young generation, to monitor their calorie burnout, the distance they run/walk, etc. Exercise is considered to be a protective factor for mental health too. It acts as a stress booster, so these digital/smart watches indirectly help promote mental health and well-being. They may motivate the individual for regular exercise and sleep. A few smartwatches also sense the stress level and guide about relaxation techniques, breathing exercises, and mindfulness, which can be timely and accurately practised. If these devices are developed with mental health professionals in the loop, the scientific validity of the assessments and interventions can be ensured. One limitation of such devices is that their regular notifications may cause distraction or anxiety.

Medical education (application based): Medical institutes have recently been utilizing digital or application-based platforms for medical education. Empathy and emotional intelligence can be taught digitally by specifically designed application/software (e.g., empathy learning program). A new construct in medical curriculum, 'AETCOM Module,' includes teaching/learning 'Attitude, Ethics and Communication'. This is taught by case discussions, role plays, panel discussion, debates, showing videos, etc., and this can be done on digital media. Applications like 'Marrow' are utilized by medical students for various teaching learning modules in formats like videos and question banks. Applications like this can also be utilized to teach Psychiatry.

Detox Applications: Numerous applications exist to diagnose excessive screen use, monitor and track the time spent on social media, block notifications and distracting apps, and provide an analysis of smartphone activities (e.g., AppDetox, OFFLINE, Flipd, Moment, ClearLock, Antisocial).

MENTAL HEALTH BENEFITS OF DIGITAL MEDIA

Effects of social connectedness: Social contacts stimulate the secretion of stress-relieving hormones. Social networking may help fulfil many human needs like support, safety, association, estimation, acknowledgement, and love and respect, leading to higher satisfaction.

Early detection: In many cases, a person's posts or comments directly indicate a psychological issue like depression, anxiety, or the emotional turmoil one is going through. This can be a clue that the person is struggling with some mental problem and needs help.

Video games: Video games can challenge one's mental abilities, which can help improve performance in other areas. Gaming activities stimulate and increase brain function. Video games are known to have an addiction potential if played excessively, but research has shown that certain video games are helpful in enhancing cognitive abilities and functions like attention, processing speed, mathematical skills [4, 5] and memory. Cognition-enhancing abilities of video games can also be utilized for older people or dementia patients. User-friendly video games with guidance and supervision of family members (balancing their screen time) can help improve performance of older people in cognitive tasks. [6, 7]

Video games are a potential tool in the treatment of attention deficit hyperactivity disorder (ADHD). [8] Certain video games can help in cognitive training and provide structured challenges that target relevant, specific cognitive skills. A factor limiting their use, however, is that video games may increase the risk of violence and aggression.

Social media: Besides being an excellent tool for entertainment, connectedness, etc., if people use a thoughtful approach to using it with a healthier balance (controlling their screen time, turning off the notifications, avoiding checking the phone repeatedly), it can prove to be an impactful way of promoting mental health. It helps to get social support, access mental health services easily (online consultation, helplines, or hotlines), cope with stress, improve the mood, and get positive inspiration for lifestyle modifications and provides various opportunities. SM like Facebook keeps a record of old photos and memories and gives timely notifications of the activities done on the platform.

Challenging stigma about the marriage of a mentally ill: SM can also be utilized to find suitable partners among stable mentally ill persons, as there are certain matrimonial sites specially designed for the marriage of stable mentally ill people. Some of such matrimonial sites are already functional. This helps reduce the stigma about mental illness in the context of marriage and may prevent the post-marriage consequences of hiding the mental illness during marriage. It may also help to get a sense of accomplishment to a stable mentally ill person, though specific policies about supervision of marriage by family members and guidance about having progeny need to be formulated.

Awareness and Advocacy: SM platforms have facilitated increased awareness and conversations surrounding mental health issues. Activists, organizations, and individuals can use these platforms to raise awareness, challenge stigma, and advocate for change, leading to improved mental health support and resources. Various techniques for mental health promotion via electronic and SM are listed in Table 1.

PRECAUTIONS REQUIRED

Though electronic and SM are good means of sharing and disseminating personal or professional information quickly and easily, they also carry a substantial risk of breach of privacy, misunderstanding of professionalism, break in confidentiality, etc. This increases the chances of blurring relationship boundaries with patients or colleagues. Distinct guidelines

are required for the use of social media for professional or personal purposes. Psychiatrists should maintain ethical and professional standards while behaving on electronic or SM. While using SM, Psychiatrists should weigh the potential benefits and risks. One should maintain a professional approach and avoid making comments that are not in their personal or professional capacity. One should remember that once information is disseminated in SM, removing it is usually impossible. It spreads easily and rapidly. While posting any information or communication, psychiatrists should always be aware of their online safety.

Use of media for health education and therapy: As the boundary between appropriate/inappropriate use or social/professional use of media is blurred, possibility exists of violating the boundary knowingly or unknowingly. This may lead to allegations from patients, causing legal problems. Many mental health professionals have had to face the charges of being guilty of professional misconduct or nonprofessional relationships on media, especially SM (Box 1).

Managing a SM profile: Though what one should and should not post on SM is a personal decision, as a psychiatrist, there are many implications of publishing certain information on SM if it is accessible to everyone. This may seriously affect past, current, or future relationships with the patient or colleagues. Sharing personal details, relationship aspects, self-health-related information, political comments, opinions about certain persons or institutions, etc., can seriously impact the professional life of a mental health professional along with the threats to their safety. One should not post/disclose any information that can be a source of distress to any patients, their family members, or professional colleagues. Learning and utilizing the privacy settings of SM is recommended. Respect the information (of any kind) published by patients on their SM accounts. Ensuring confidentiality is expected from healthcare providers to avoid legal and countertransference issues. Any patient's information obtained from SM, if beneficial for clinical purposes, should be re-verified for accuracy before use.

In this context, it is vital to be aware of National Medical Mission Guidelines regarding advertisements by Registered Medical Practitioners (RMP), including psychiatrists. Section 6.1.1 of the Indian Medical Council (Professional Conduct, Etiquette, and Ethics) Regulations, 2002, states that "A physician shall not make use of him/herself (or his/her name) as an advertising medium nor shall he/she promote any particular mode of treatment." Section 6.1.2 of the same regulations prohibits doctors from soliciting patients directly or indirectly through advertisements, whether in the form of signs, displays, circulars, pamphlets, websites, or personal communications. [9] Doctors can also list their names in authorized directories and websites maintained by recognized professional medical associations or institutions. Physician/group of physicians/institutions cannot solicit patients directly or indirectly, which is considered unethical. An RMP is, however, permitted to make a formal announcement in the press regarding the start of practice, change of type of practice, change of address, temporary absence from duty, resumption of another practice and public declaration of charges. Boxes 4-6 describe recommendations/guidelines for psychiatrists about media use, media reporting of mental illness and suicide, and managing promotional websites.

Medico-legal Aspects: Healthcare providers must be aware of the local laws, regulations, and guidelines governing patient's privacy and adhere strictly to these standards when using electronic and SM platforms.

HARMS TO MENTAL HEALTH

Apart from physical harms ranging from eye strain and headache to poor immune system functioning and cardiac arrest [10], increased and inappropriate use of electronic gadgets and SM has diverse adverse consequences on mental health:

Figure 1 depicts the vicious cycle of use of media and mental health disturbances.

Many people use media to express themselves, to relieve their sense of inadequacy, low self-esteem, and anxiety associated with expressing one's views in person, to approach a person of the opposite sex, which they couldn't do in person, etc. Many people succeed, and it is rewarding for them, especially when they get positive responses to their posts. But many others may further land up in aggravation of those feelings of inadequacy and decrease in self-esteem when they don't get the expected response to their posts or when they compare themselves with others online. This can be an indicator of mental health problems.

FOMO: Fear of missing out on something important, such as an inside joke or some information, leads to repeated checking of media and spending much time at the cost of neglecting many other priorities, along with procrastination. Individuals may feel pressured to participate in various activities, events, or trends, increasing stress and anxiety.

Distorted identity: Using excessive filters to appear good or get more responses and likes can lead to a distortion of the real self with false boosting of self-image.

Cognitive problems: Reduced concentration, problems with memorizing, impaired judgment, easy distractibility, poor academic performance, etc

Emotional and behavioural problems: Irritability, loneliness, anxiety, depression, insomnia, competitiveness, insecurity, low self-esteem, risk-taking behaviour, delinquent behaviour, poor self-care, excessive use of pornography, indulging in or being victims to cybercrimes, etc. Binge watching on media increases the risk for behavioural addictions, sleep problems, sedentary behaviour, and distress (loneliness, anxiety, and depression).

Information Overload and Digital Exhaustion: The constant bombardment of information through electronic media can lead to information overload and mental fatigue. Continuous exposure to screens, notifications, and digital distractions can impair sleep, contribute to attention deficits, and negatively impact overall mental well-being.

Indirect effects: Negative view or fear about anything (e.g., diseases like COVID-19, a specific situation), copy-cat acts (suicide/risky games or stunts), getting inappropriate/harmful clues for illegal/unethical activities, etc.

Social issues: Social isolation, decreased confidence for physical social exposure, reduced interactions leading to problems in social relations, less time spent with colleagues or friends, social out-casting, marital problems, risk of divorce, etc.

Social Comparison and Self-Esteem: Constant exposure to carefully curated images and idealized lives on SM can trigger social comparison, leading to feelings of inadequacy, low self-esteem, and increased anxiety. The pressure to present a perfect online image can harm mental well-being.

Occupational: Reduced concentration and frequent mistakes at work, procrastination, lethargy, more time required for work completion, irritability, etc.

Munchausen by proxy: Internet has increased the prevalence of Munchausen by proxy cases wherein mothers fake the severe illnesses in their children to get support and sympathy on social media.

CYBER-PSYCHIATRIC DISORDERS

This group of disorders are characterized by the preoccupation with the use of Internet, inappropriate or compulsive internet use, internet used with malicious intent or to harm others, etc. associated with effects on other areas of life. Individual also keep secrecy about the extent of on-line (internet) use and there is an impairment in real-life functioning. [4] A few are enumerated below.

Cyber-sexual addiction refers to excessive downloading, watching, and trading of online pornography. Excessive porn watching can have complications such as erectile dysfunction.

Cyber-relational addiction: Here, individual gets involved in online relationship (chatrooms, social networks) and gives more importance to the virtual encounters than real life ones, resulting in marital discord and unstable family relations.

Internet compulsions: It is an inability to control Internet use and mental and behavioural preoccupation with online activities, associated irritability when the person is unable to go online, mood changes, and conflicts with significant others over the Internet use. Examples include online gambling, online shopping, and trading online.

Computer addiction: Individual is excessively engaged with the use of computer to the extent of ignoring or avoiding other important aspects of daily life.

Cyberbullying and Online Harassment: SM platforms can become breeding grounds for cyberbullying, trolling, and online harassment. Such experiences can lead to significant psychological distress, anxiety, depression, and even suicidal ideation among survivors.

Revenge porn (non-consensual pornography) is sharing of sexually explicit images without person's consent with an intent to humiliate or cause distress, typically posting images on SM, personal chat groups, or online.

Cyberchondria is associated with repeated Internet searches for medical information, resulting in excessive concerns regarding physical health.

Use/Abuse: It is difficult to accurately differentiate appropriate from inappropriate use of media. Pathological use of media is considered a behavioural addiction. It is comparable to the substance-related addiction with respect to tolerance, craving, inability to control the use of media, continuing use despite knowing/having negative consequences, withdrawal symptoms, impairment in social, occupational, relationship and other domains of life along with spending excessive time online/offline on electronic gadgets. Some authors have formulated the criteria for internet addiction but overall, there are no structured criteria for inappropriate use of media (electronic/social).

Young described the excessive use of the internet as an addiction for the first time. She also modified the DSM IV criteria for pathological gambling to formulate criteria for pathological internet use. [11] DSM 5 describes it under Appendix and not in the text of addictive disorders. Several instruments are available for assessment of internet addiction, but none of them are "gold standard". [12] The most commonly used ones are the Internet Addiction Test (IAT), the Internet Addiction Diagnostic Questionnaire (IADQ), the Chen's Internet Addiction Scale (CIAS) and the Internet Addiction Scale (IAS). Most of the findings about internet addiction in literature are based on surveys and self-prepared non-validated

questionnaires. Also, the majority of the studies do not differentiate essential from non-essential use of the internet like employee remaining logged in all the time to timely check their mail, trade workers doing online trading, software workers doing their job, spending time on online studies and research, people remaining online for searching of jobs, etc. One meta-analysis showed the pooled prevalence of internet addiction in Indian youths as 22% (95% CI: 0.2 to 66%). [13]

Suicide: Risk of suicide is higher in people with inappropriate use of digital media. There is increasing evidence about internet and media influencing suicide-related behaviour. [14]

Effects on children/adolescents: Though electronic gadgets and the internet have become a reality for children and adolescents' lives with considerable importance in education and development, they are exposed to online risks of abuse/addiction, cyberbullying, accessing inappropriate material, etc. Other risks include reduced physical growth due to less time spent playing outdoor games/activities, changes in the pattern of thinking as, instead of looking to adults around them for cues about how to interpret social behaviour in people, children have become dependent on SM peers for the purpose, imitating violent behaviour (violence is almost a norm in movies/games/serials), reduced interactions, irritability, stubbornness, poor scholastic performance, antisocial behaviour, sleep disturbances, memory issues, poor attention, impulsivity, etc.

Recommendations regarding media use for adults and children/adolescents are provided in Boxes 5 and 6, respectively.

FUTURE ADVANCES

The future of electronic and SM use in relation to mental health and well-being holds both opportunities and challenges. While technology can enhance mental health support, foster community connections, and raise awareness, careful attention must be given to potential risks and ethical considerations. Striking a balance between the benefits and risks of electronic and SM will require ongoing research, collaboration, and responsible use to ensure a positive and supportive digital environment for all.

Personalized Mental Health Support: The future holds immense potential for the use of electronic and SM in the field of mental health support. With the rise of artificial intelligence and machine learning, personalized mental health applications and chatbots could be developed to provide timely interventions, support, and therapy to individuals experiencing mental health challenges. These tools may leverage user data and patterns to offer tailored coping mechanisms and resources. Thus, access to mental health literature and mental health care services will be easy in the future.

SM Influencers as Mental Health Advocates: In recent years, many SM influencers have used their platforms to raise awareness about mental health issues and promote self-care practices. This trend is expected to continue, with influencers becoming more proactive in sharing evidence-based strategies, encouraging open conversations, and combating the stigma associated with mental health. The influence of these individuals can play a significant role in shaping positive online communities and fostering a sense of support and understanding. SM influencers can be an excellent resource for mental health awareness, promotion of positive mental health and preventive psychiatry if mental health professionals join hands with them, as they have the potential to reach the masses due to their fan following and reach.

PRINT MEDIA

Print publications, including newspapers, general magazines, and specialized health publications, continue to be popular in India despite the digital revolution. They serve as excellent platforms for spreading awareness about mental health. However, in today's era of short attention spans due to SM and reels, it can be challenging to capture the masses' attention. Unless one is diligent, written articles may not reach the audience they deserve. Here are some remedies recommended by experts in popular science writing:

DEPEND ON ACCURATE SOURCES

- **Base the articles on evidence:** Instead of filling the pages with personal opinions and experiences, provide information from the latest research in the field. Search for appropriate articles on PubMed and Google Scholar, using filters to get recent results. While it may not be possible to go through each paper in detail, review articles and introduction sections of research papers can provide valuable insights. Develop the ability to critically review research findings (one common error is confusing between correlation and causation). Focus on summarizing and synthesizing information rather than listing individual study findings. Instead of hyper-accuracy, use approximate figures (e.g., "about 90%" instead of “91.45%”).
- **Include local research data:** Data from abroad may not always be applicable to India or a specific region. Whenever possible, include research information, such as prevalence rates, from the relevant geographical area. For instance, when writing about the complications of cannabis use, mention the prevalence of cannabis use found in studies conducted in your state or nearby ones. Since such papers may not be available in PubMed or Scopus, utilize resources like Google Scholar and general search engines.
- **Sources of tips:** If your intention is to share with the readers several practical tips related to a mental health topic, journal articles may not provide you usable information. Websites like Psychology Today and WikiHow, as well as foreign books written for the general public, can be helpful sources. If you frequently write for the public, consider a Kindle Unlimited subscription to access such books at a lower cost. Ensure that the tips selected have face validity based on your professional training and experience and are relevant to the local culture.

CLARITY IN WRITING

To improve the clarity of your writing, consider employing the following techniques:

- **Metaphors:** Use metaphors to explain complex concepts. For example, liken iron channels to gates or compare synaptic pruning to pruning plants.
- **Examples:** Accompany concepts with relatable examples that the general public can understand.
- **Handling jargon:** Avoid using technical terms whenever possible. If they are essential, first present them in a shorter sentence. If it is crucial to the article, use it in the title of the article and as the first word in the sentence in which it first appears. Otherwise, place the term in the middle of a sentence instead. Always explain them with examples. For example, after defining “oversharing,” one can say, “Examples include posting on SM the photos of every meal or most places you visit.” Should you mention the technical term as its original English version, or should you translate it to the Indian language in which you are writing? That should be decided on a case-by-case basis. If you feel the English version of the term would be familiar to many, you can use that itself. Sometimes, one may have to use both the English and the translated versions. If one translation in your language is likely to be familiar to the readers, use that word instead of creating a new translation yourself.

- **Avoid the "curse of knowledge":** Don't assume that readers possess basic information about your topic. Define and explain basic terms to ensure clarity.
- **Utilize images:** Incorporate appropriate photos and diagrams to enhance understanding. Create your own visuals or find copyright-free images online. Provide acknowledgments when using images from other sources and ensure they have sufficient size and resolution for printing.

MAKING IT ENGAGING

To make your write-up more interesting, consider the following techniques:

- **Quotations:** These can be provided at the beginning of an article or anywhere in the middle. For example, an article on the psychology of violence may start with the following quotation from Isaac Asimov: “Violence is the last refuge of the incompetent.” While translating a quotation to an Indian language, don’t do it word-by-word. Instead, draft a version that conveys the essence of the sentence. Using quotations from literary works or sayings in your language would be more effective. Utilize online resources or books of quotations to find relevant quotes.
- **Proverbs:** Incorporate proverbs from the local language when appropriate.
- **Anecdotes:** Include anecdotes from news reports or your own clinical experience. For instance, when writing about delirium tremens, mention cases reported in the news or from your own practice. Maintain a personal collection of anecdotes using software like Evernote, tagging them with appropriate keywords for easy retrieval when writing on specific topics.
- **Humor:** Use jokes related to the topic to engage readers. Find suitable jokes online and acknowledge the source.
- **Creative titles and subheadings:** Avoid academic-sounding titles and opt for wordplay, rhymes, or puns. Learn from the titles journalists use in sports pages. Strive for creative and attractive subheadings, as the readers might scan them before deciding to read the whole article.
- **Supplementary boxes:** Prepare boxes with interesting trivia, significant tips, or additional material that may not fit in the main article. For example, in an article about the health benefits of happiness, include a box mentioning the study that found a decrease in cardiac deaths in French men on the day France won the football world cup in 1998.

BALANCING BREADTH AND DEPTH

When writing within word count restrictions, it is important to strike a balance between breadth and depth. Prioritize providing the essential first-level information that the public needs to know. Avoid diving into controversies or delving into advanced topics meant for professionals.

SENTENCES AND WORDS

Prefer short words and sentences, especially when discussing complex ideas. Vary the length of consecutive sentences to break monotony, ensuring readability and clarity in longer sentences. Maintain a smooth flow between adjacent sentences using transitional phrases like "moreover," "nevertheless," "however," and "secondly" to improve the overall coherence of the writing.

Choose simple and specific words that best convey the intended meaning. Continuously expand your vocabulary by reading general literature, non-fiction articles from various fields, and using a thesaurus.

REWRITING AND EDITING

As Ernest Hemingway famously said, "The first draft of anything is shit." Editing is crucial to remove redundancies and improve precision and clarity, the overall quality of the writing, and the “sound” of the passages. It is beneficial to wait a few days before editing, to gain a fresh perspective. While editing, pay attention to ambiguities, lengths of sentences and paragraphs, punctuation, and typos. Ensure that the words used are the best ones to convey the intended meaning. Useful methods to detect errors that might otherwise be missed include taking a printout of a typed article and listening to it using appropriate tools.

FINDING IDEAS

Magazines themselves often propose topics, especially to individuals who can provide high-quality drafts within deadlines. Beginners can start by preparing articles and publishing them on SM or in small publications to gain visibility. Another approach is to find interesting and novel topics, write articles, and submit them to suitable publications with a well-crafted cover letter. Keeping up with the news can provide ideas about the most discussed mental health topics that magazines might find worthy of publication. Additionally, apps like "Researcher: Discover and Discuss" can help follow scientific journals in your areas of interest and identify cutting-edge research.

Box 7 provides a list of recommended books on writing in general and popular science writing in particular.

CONCLUSION

By harnessing diverse media effectively, we can empower individuals, reduce stigma, and support mental well-being. It is also crucial to recognize and address the potential negative impacts of digital media on mental health and well-being.

Figure 1: The vicious cycle of media use and mental health disturbances

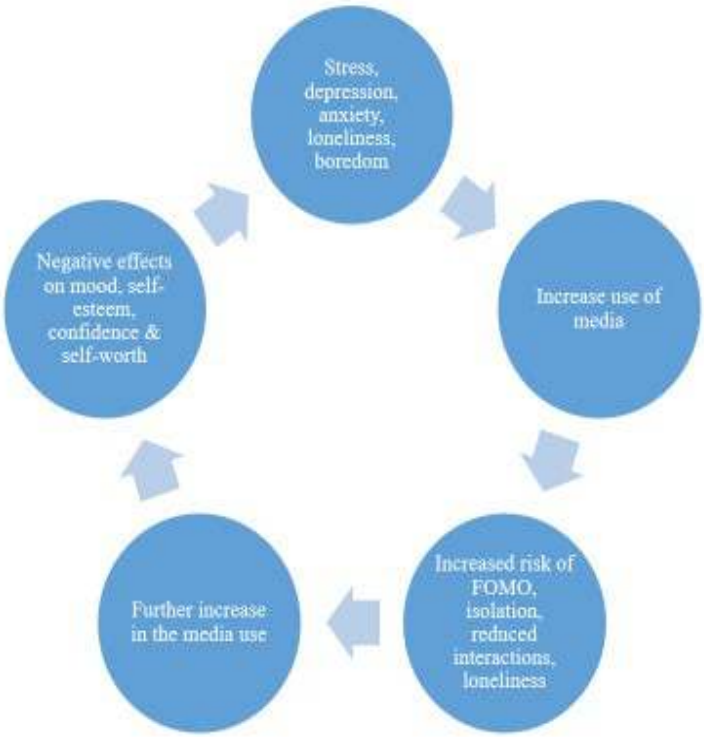

Table 1: Mental health promotions through social and electronic media

Promotion activities	Social Media	Electronic Media
Creating mental health awareness and debunking myths	Booklets, guide statements, newsletters, videos, interviews, and live online programs.	Interviews (mental health professionals, recovered patients' experiences), live question/answer or phone-in program
Information on mental illness	Reels, live programs on Facebook/Zoom/Google Meet	Talk show with the expert (TV/Radio)
Preventive psychiatry-Stress management, career guidance, work/life balance, lifestyle modifications, mindfulness, time management, goal setting, etc.	YouTube videos, interactive sessions, and recorded videos made publicly available.	Online sessions/live programs
Observance of national/international mental-health-related days	Uploading pre-recorded videos	Circulating videos and keynotes
Soft-skills training (communication skills, resilience, empathetic approaches, etc.)	Online programs on any social media platform	Live program and video recordings

Box 1: Recommendations for Online Consultation and Therapy

Telepsychiatry has become increasingly important in India, particularly during the COVID-19 pandemic. The following are general guidelines and considerations for telepsychiatry in India.

Regulatory Framework: One should be familiar with the telemedicine guidelines issued by the National Medical Commission or Government of India and the Indian Psychiatric Society. These guidelines provide a framework for the practice of telemedicine, including telepsychiatry, in India. Ensure compliance with the guidelines related to patient consent, documentation, confidentiality, and prescription protocols.

Patient Consent: Obtain informed consent from patients before initiating telepsychiatry sessions, ensuring they understand the limitations, benefits and risks associated with remote mental health consultations. Document the patient's consent as per the guidelines provided by the regulatory bodies.

Privacy and Confidentiality: Use secure and encrypted platforms for telepsychiatry sessions to protect patient privacy and confidentiality. Educate patients about the importance of participating in sessions from a private and secure location to maintain confidentiality on their end as well. Recording the session should be practised whenever possible.

Technology Requirements: Ensure reliable internet connectivity and appropriate telecommunication infrastructure to support uninterrupted telepsychiatry sessions. Use good video conferencing platforms or secure communication tools that adhere to data protection laws in the country.

Licensing and Credentials: A valid license to practice psychiatry is a must. Ensuring one's adequate training and qualification in telepsychiatry practices is necessary. Consider additional training programs or certifications specific to telepsychiatry if available. It is also recommended to keep a record of the patient's identity during an online consultation.

Initial Assessment and Evaluation: Conduct a comprehensive initial assessment of the patient's mental health status, medical history, and any potential contraindications for telepsychiatry. Assess the patient's suitability for telepsychiatry and identify cases where in-person consultations may be necessary due to the severity of the condition or other factors.

Emergency Preparedness: Establish protocols and mechanisms for managing psychiatric emergencies remotely, including clear guidelines for assessing risk, suicide prevention, and referrals to emergency services when needed. Communicate emergency contact information to patients and ensure they can access local crisis helplines or emergency services.

Cultural Sensitivity and Language: Be aware of cultural differences and nuances while providing telepsychiatry services. To ensure adequate patient understanding and engagement, one must adapt the approach and communication style accordingly. Provide interpretation services or consider using multilingual staff or interpreters when language barriers exist.

Continuity of Care and Follow-up: Develop a plan for ongoing care, including regular follow-up sessions and medication management through telepsychiatry. Coordinate with local healthcare providers or support systems to ensure continuity of care for patients, including referrals for in-person care whenever necessary.

Evaluation and Quality Assurance: Regularly evaluate the effectiveness and safety of telepsychiatry services, seeking feedback from patients and monitoring outcomes. Engage in ongoing professional development, including attending relevant conferences, webinars, or workshops focused on telepsychiatry.

Box 2: Recommendations for psychiatrists regarding the use of digital media

- While doing any activity on social media, one should ensure whether that particular action has any legal consequences, whether it will bring any disrepute as a professional or to the psychiatry speciality, whether one is breaching any confidentiality related to the patient and whether the step taken is going to help in the care of a patient or not.
- Social media should be utilized with a professional approach (e.g., not commenting online that one would not do in a personal or professional capacity).
- Be aware of professional boundaries with colleagues and patients and maintain confidentiality while using social media.
- Be careful while posting any information/image online or commenting on any issue. Use judgement and be mindful of ethical and moral responsibility while posting anything online.
- Be careful about what is to be posted publicly; if one notices the post of some inaccurate information, correct/remove it as early as possible and apologize if required.
- Be watchful about online presence and impression. Keep searching for yourself using any search engine regularly.
- Keep a separate login for personal and professional social media profiles so as to use professional media profiles for patients.
- Focus on whether the post is appropriate or not rather than whether it is professional or personal.
- Don't post any images/taglines (profanity, violence, sexuality, intoxication, illicit substance use, and other questionable behaviour) that may bring one as a professional and Psychiatry to disrepute.
- If a patient's information is sought online, ask for permission, and ensure that you use the information only for the well-being of the patient.
- Be careful about diagnosing pathological internet use after clarifying the essential and non-essential internet use.
- Use the media to promote positive mental health, spread information about common mental illnesses to the general public, improve treatment adherence and use separate forums to discuss professional dilemmas, gain knowledge and hone clinical skills online.
- Take caution while advertising oneself in media to avoid misunderstanding and getting trapped in legal trouble.
- Psychiatrists must treat colleagues fairly and with respect. This covers all situations and all forms of interaction and communication. One must not bully, harass, or make gratuitous, unsubstantiated, or unsustainable comments about individuals online.
- Email communication with a patient- use a separate email for professional purposes. Advise patient not to communicate via mail in emergencies or during acute drug reactions. Set up an automatic reply (will help especially in anxious patients). Keep a record and request an acknowledgement receipt. Use discretion in the subject line and keep the language scientific, with no personal comments (to avoid misinterpretation). If multiple emails are required, request a face-to-face/phone consultation. Take care of confidentiality during email communication.

Box 3: Guideline to media on reporting of suicide and mental illness

- The headline should promote the Papageno effect (e.g., how wrong the step of suicide taken is), or it should never be a headline.
- Describe, in short, the actual facts without sensationalizing or romanticizing it.
- Minimal details about the method, lethality, or location of the act
- No picture of the body, actual place, weapon, or complete personal details of the victim is to be shown.
- The cause of suicide shouldn't be oversimplified. Precipitating factor can be mentioned.
- The history of psychiatric illness/problem should be clearly mentioned with a suggestion to seek help from mental health professionals.
- Repetitive reporting in the news should be avoided.
- Suicide victims should not be glorified (like by calling them martyrs)
- Surviving relative's interviews should not be publicized or should be done with great caution.
- News should never end without detailing about how suicide could have been prevented by various measures, including a psychiatrist's help.

Guidelines for reporting a Mental illness on Media

- The goal should be to promote mental health or treatment and not the fear, stigma, embarrassment, or negative view about the persons with mental illness.
- The focus should be on how common, real, and treatable mental illnesses are.
- Family members' role in treating mental illness and the possible impact on their mental health should be emphasized.
- Recovered patients' experiences can be publicized (news/interview/video) with their consent.
- Accurate, factual, understandable, and simplified descriptions of mental illness should be publicized.
- Information about mental health care facilities should be widely displayed or flashed.
- Reliable references should be provided for accurate information, symptom complexity, etiology, treatment options, the importance of compliance, and the treatability of the condition, based on facts/statistics.
- Stigmatizing words should be avoided, like lunatic, mad, psycho, mental, sleeping pills, etc.
- Usual myths and misbeliefs about mental illness should be specified and clarified.

Box 4: Recommendations for managing a mental health promotional website

- Ensure that all information provided on the website is accurate, evidence-based, and supported by reputable sources such as scientific journals, government health agencies, or renowned medical organizations.
- Clearly distinguish between information and promotional content, clearly labelling any sponsored or advertising material. Ensure that promotional material is not presented as objective health information.
- Regularly update the website to reflect the most current and accurate health information available.
- Clearly disclose the website's purpose, ownership, and funding sources, to provide users transparency.
- Provide information about the qualifications and expertise of the website authors or contributors, to establish credibility.
- Clearly communicate the website's privacy policy, informing users about the types of data collected, how it will be used, and whether it will be shared with third parties.
- Obtain explicit user consent before collecting any personally identifiable information and provide options for users to control the use of their data.
- Adhere to ethical advertising practices and comply with relevant regulations and guidelines.
- Avoid endorsements or testimonials that may misrepresent the effectiveness or safety of mental health services.
- Design the website to be user-friendly, accessible, and inclusive, considering different user needs, including those with disabilities or language barriers.
- Provide opportunities for users to interact with the website through features such as comments, forums, or contact forms, enabling them to seek clarification or ask questions.
- Respond promptly and professionally to user inquiries or feedback, to foster trust and engagement.
- Comply with legal and regulatory requirements.
- Do not disclose the patient's identity on a website if any material related to patients is displayed, even for educational purposes.
- Regularly reviewing and updating the website's content, addressing user feedback, and staying updated with medical research and guidelines are crucial for maintaining a trustworthy and reliable health-related website.

Box 5: Proposed and possible healthy ways of media use for Adults

- Have a deliberate plan of usage, based on the need and duration of the use of the gadget.
- Look out for gadget-free fun and educational activities.
- Have a plan of action to deal with unintended reactions to posts, like not responding to them immediately.
- Schedule specific times to reply to posts/messages/emails. Responding only when one has the time to craft a thoughtful response is better.
- To get optimum sleep, keep the bedroom free of gadgets and avoid using them within one hour of bedtime.
- Remove from the phone all unnecessary applications that had been downloaded impulsively or are not currently used.
- While working, and if there is no need for the phone, keep it away and difficult-to-access till the work is accomplished.
- Use applications (like Appdetox and Moment) to track and regulate smartphone usage. Such applications give feedback about the extent of screen use and help set rules for using the social media apps.
- Talk to a trusted person on encountering online difficulties. One may also consult a mental health professional (like a counsellor or a psychiatrist) if there is difficulty with judicious screen use.

Box 6: Recommendations regarding children's media use

- Children should have access to age-appropriate content suitable as per values and maturity level.
- Daily screen time should not exceed 1-2 hours.
- Utilize parental control features and privacy settings provided by electronic devices, websites, and social media platforms.
- Foster open communication with children about their digital experiences, including encouraging them to share their concerns, questions or encounters they have online.
- Educate children about online safety.
- Parents should proactively look for possible evolving threats (online sexual predators) and warn them about the same. They should gently guide them how to respond when they come across any disturbing or inappropriate content.
- Teach children about the difference between virtual and real-life interactions and the potential risks of sharing personal information online.
- Encourage children to engage in educational and creative activities that promote learning and skill development.
- Motivate them for a balance between online and offline activities.
- Adults should serve as positive role models for responsible media usage.
- Ensure that the child should not sleep with the electronic gadget.

Box 7: Suggested books on writing and popular science writing

- General books on writing
  - "WRITING TOOLS: 50 Essential Strategies for Every Writer" by Roy Peter Clark
  - "It Was the Best of Sentences, It Was the Worst of Sentences: A Writer's Guide to Crafting Killer Sentences" by June Casagrande
  - "Building Great Sentences: How to Write the Kinds of Sentences You Love to Read" by Brooks Landon
  - "How to Write a Sentence: And How to Read One" by Stanley Fish
  - "Make Every Word Count: A Guide to Writing That Works—for Fiction and Nonfiction" by Gary Provost
  - "Beyond Style: Mastering the Finer Points of Writing" by Gary Provost
  - "The Sense of Style: The Thinking Person's Guide to Writing in the 21st Century" by Steven Pinker
  - "The Oxford Essential Guide to Writing" by Thomas S. Kane
  - "The Art of Nonfiction: A Guide for Writers and Readers" by Ayn Rand
- Books on science writing
  - "Don't be such a scientist" by Randy Olson
    - (Quoting someone) "When it comes to mass communication, it's as simple as two things: arouse and fulfill. You need to first arouse your audience and get them interested in what you have to say; then you need to fulfill their expectations".
    - "Juxtaposing of serious science with silly and even sexual humor… has the potential to be extremely powerful in mass communication".
  - "Am I making myself clear? A scientist's guide to talking to the public" by Cornelia Dean
    - (Quoting someone) "Glocal" approach - taking a global issue and making it meaningful on a local level.
    - "State your conclusions in a way that is interesting and informative but not dogmatic."
  - "The craft of scientific writing" by Michael Alley
  - "The science writers' handbook" Edited by Thomas Hayden and Michelle Njhuis
  - "The science of communicating science: the ultimate guide" by Craig Cormick
  - "Health writer's handbook" by Barbara Gastel

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Stress Management in Family Environment

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Stress Management in Family Environment

1. Introduction

Stress and family are important factors that determine the course and prognosis of various psychiatric disorders. Even in the absence of obvious psychiatric disorders, stress and its association with family, in other words, 'stress in the family' might have to be considered as a therapeutic target. This is because acute or chronic stress is known to predispose individuals to negative mental (such as anxiety, depression and insomnia) and physical consequences (such as worsening of hypertension, diabetes, etc) . In this clinical practice guidelines we intend to provide guiding principles to mental health professionals for managing 'family stress' in general and to the context of various psychiatric disorders.

2. Stress and family stress- modern theories and basic concepts

Before we describe the guidelines for stress management in family environment, we briefly explain the concepts we need to have a basic understanding about.

The term ***'stress'*** was introduced to the medical terminology by Hans Selye who described it as a "nonspecific response of the body to any demand" in 1936.[1] Selye's ***"stress theory"*** describes a "triphasic pattern of non-specific physiological responses" to "nocuous agents" that he termed 'general adaptation syndrome'. This response represents "a generalized effort of the organism to adapt itself to new conditions" and Selye draws parallels between this response and human immune response to infections.

Understanding that family crisis can also be nocuous, Reuben Hill (1949)[2] proposed of the ***"family stress theory"*** according to which three factors influence the causation of family crisis (X)- the event (A); the family resource that meets the event (B); and the family make (C). It has also been called as ABCX model.

Further, emphasizing the role of family resilience in the family stress response, Patterson (1988)[3] proposed the Family Adjustment and Adaptation Response (FAAR) Model, similar to Selye's 'general adaptation'. This theory marked the start of the use of ***"family 'resiliency'"*** approach in practice settings. Various other theories in this respect highlight the role of family resilience in tackling family stress. It has been postulated that both internal relational process and risks/opportunities in the social systems influence family resilience, in the wake of single significant stressor or piling up of multiple stressors.[4]

As the terms 'family make' and 'internal relational processes' are important in understanding family stress, it is very important to understand the constructs of '**family structure and types'** and ***'family environment'.***

A redefined classification of ***family structure and types in India*** was proposed in 2013.[5]

Table 1: Family structure and types		
Types	**Name**	**Description**
I	Proton	A single individual living alone or manages food/cooking for self even when staying with others
II	Electron	Two or more unmarried/widowed individuals staying together
III	Nuclear	A married couple staying with married/unmarried children
IV	Atom	A nuclear family with any other unmarried family member such as widowed mother, divorced sister, etc.,
V	Molecular	Two married couples of any two vertical generations with/without unmarried people of any other generation
VI	Joint	Two or more married couples of a single generation (horizontal level) or three or more couples if multiple generations (vertical levels)
VII	Quasi-	To be added to any of the types- type III onwards for a couple who are sharing kitchen and financial resources as a married couple but not legally married

Some special types of families are also described. They are 1) single-parent family; 2) reconstituted family, where the family unit consists of a married couple with one or both of them have children from previous marriage. Stepfamilies are considered as reconstituted families.[6]

The domains of family environment can be understood by the 10 dimensions of the family environment scale[7] (Table 2). Indian adaptation of this tool[8] suggests an additional dimension of 'acceptance and caring' in Indians' family environment.

Table 2: Dimensions of Family Environment			
1	Relationships	Cohesion	"degree of commitment, help and support family members provide for each other"
2		Expressiveness	"extent to which family members are encouraged to act openly and to express their

			feelings”
3		Conflict	“amount of openly expressed anger, aggression and conflict in the family”
4	Personal Growth	Independence	“extent to which family members are assertive and self-sufficient, and make their own decisions”
5		Achievement Orientation	“extent to which activities (e.g. school or work) are seen in an achievement-oriented or competitive manner”
6		Intellectual-Cultural Orientation	“interest in political, social, intellectual and cultural activities”
7		Active-Recreational Orientation	“participation in social/recreational activities”
8		Moral- religious emphasis	“emphasis on ethical/religious issues and values”
9	System maintenance	Organization	“degree of clear organization and structure in planning family activities and responsibilities”
10		Control	“set rules and procedures used to run family life”

Related to these constructs of family structure and family environment is the concept of family systems. According to the family systems theory, a family is conceptualized as a “complex, dynamic, and changing collection of parts, subsystems and family members”.

The Circumplex model of marital and family systems, proposed by Olson (2000)[9] proposes that there are three central dimensions of a family system- cohesion, flexibility and communication. Figure 1 shows a representation of this model. According to the model, a balance across these three dimensions in a family tends to make it more functional in the wake of family stress.

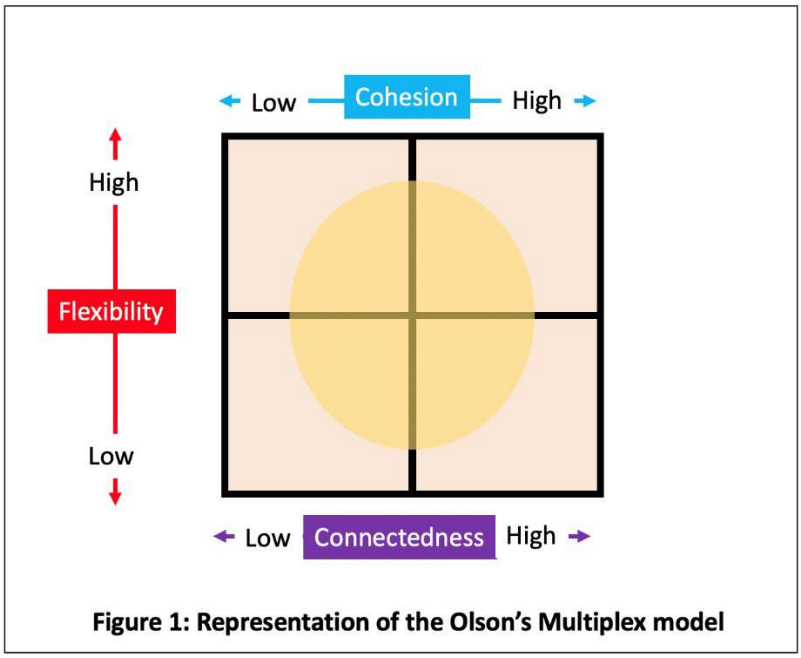

Figure 1: Representation of the Olson's Multiplex model

Now that we have described the construct of family environment and family system, we also need to understand what are the various ***forms of family stress***.

Table 3 shows various forms of family stress classified based on source/locus, intensity, duration and impact of stress.[10]

Table 3: Various forms of family stress

Sl.no	Classification	Stress	Description
1	Source/ locus	External	Stress that comes from outside the family. Eg. Job stress, stress due to ill health of an extended family member, etc.
2		Internal	Stress that originates within the family. Eg. Marital conflict, sibling rivalry, etc.
3	Intensity	Macro	Critical life events such as severe illness, unemployment, death of a family member, child birth, etc.
4		Minor	Everyday stressors such as missing a flight, child's sickness, both parents working
5	Duration	Acute	Stressors that occur for a single instance, such as a road traffic accident, theft, etc.
6		Chronic	Stressors that last a long time- illness, unemployment, etc.
7	Impact	One person	Sleep problem of a parent
8		A few member	A temporary argument between parents

		s	
9		Entire family	Most stressors, unless proved otherwise affect the entire family in some or the other way

Management of family stress by mental health professionals, therefore needs to understand which of these subsystems needs to be addressed, along with the understanding of the nature of family stress and which of the family environment dimension is in crisis. Broadly, two parts of the stress management strategy will be 1) Improve family coping while attempting to address the nature of stress and 2) improving family resilience.

3. Practical strategies for management of family stress

Step 1: Identification of family stress and the stressor

In most instances the primary role of the mental health professional is to help the family/family member identify the event or an incident that is causing stress in the family. In fact, many families do not even endorse that the family is under stress. Many families might have difficulty realizing the source of stress, due to their educational and cultural background. The mental health professional has to make a thorough assessment of the locus or source of stress and ascertain it. Single or multiple stressors may be present. The fact that the family is under stress is reflected to the mental health professional in the reason for consultation/referral to him/her. The family has to be communicated regarding this. There needs to be open communication between the professional delivering stress management and the family/family member. All the members of the family members should ideally be communicated regarding this by the mental health professional. In case that is not feasible, the responsibility of communicating to all family members should be given to a specific family member. Acceptance of the same also has to be noted, and if not acceptable to other, subsequent sessions may have to be required in step 1.

Step 2: Assessment of family environment/system and family adaptability

While the assessment of family environment can be done using tools such as the family environment scale, which is adapted for Indian population too (Bhatia and Chadha, 1993), a more useful tool that assesses family structure and depicts them in the form of a pictorial representation is the “Eco-maps”.[11] A representative explanation of the eco-maps is given in figure 2. As you can see from the figure, internal stressors such as strained relationships amongst family members can also be depicted and identified using Eco-maps. The family genogram, routinely drawn in clinical settings, also can be used to understand family relationships broadly.

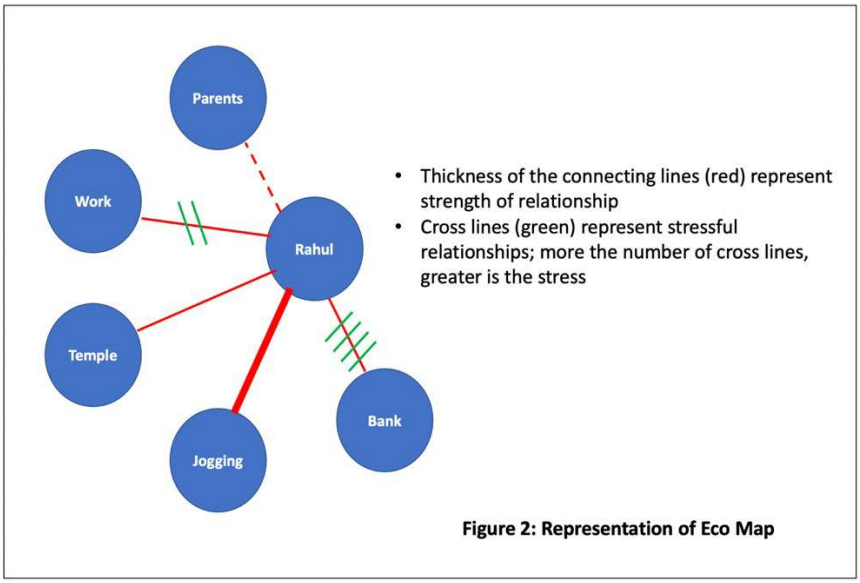

Figure 2: Representation of Eco Map

Family adaptability can be assessed using tools such as the Family Adaptability and Cohesion Scale (FACES), which has 129 items. An alternate short version is also available for quick administration.[12] FACES is based on the Olson's Circumplex model (explained earlier).

Step 3: Assessment of family stress

In the step 1, the locus/source of family stress is identified. In this step, i.e., step 3, the other forms of family stress- i.e., intensity, duration and number of family members it has impacted is assessed. Several tools may be used to assess the stressors' intensity and its impact on the family. The Social Readjustment Rating Scale (SRRS) by Holmes and Rahe (1967)[13] can be administered with ease and it has good psychometric properties. Some important items of the SRRS are given in table 4. In fact use of such rating tools allows families/family members to have a defined feedback into family stress. However, it is important to remember that the impact score must be considered in association with other factors such as duration of the stressor. It is also important to endorse that a differential impact of the stressor is expected in different family members.

Table 4: Items of the Social Readjustment Rating Scale and impact score of each of the stressful event
Death of spouse, 100
Divorce, 76
Death of close family member, 63
Marriage, 50
Fired at work, 47
Retirement, 45
Pregnancy, 40
Sex difficulties, 39
Death of a close friend, 37
Change in responsibilities at work, 29

Son or daughter leaving home, 29
Trouble with in laws, 29
Trouble with boss, 23
Change in school of the child, 20
Change in number of family get-togethers, 15
Festivals approaching, 12

Step 4: Identify ways to reduce the stressor

For all practical purposes i.e., in clinical settings for a mental health professional, this refers to treatment of the mental illness/condition one or more members of the family are diagnosed to have. Confusion regarding the diagnosis, course and prognosis, and proper adequate treatment can cause high levels of family stress. It is important to provide detailed psychoeducation regarding the illness, its course and prognosis to alleviate the stress related to the diagnosis itself. Family psychoeducation, for example in families with a member of it diagnosed with paranoid schizophrenia,[14] has been shown to reduce family stress levels significantly. Similarly, provision of specific management strategies for alleviation of adolescent mental health issues reduced the family stress levels significantly.[15] Management of illness and condition may either be by means of pharmacological intervention or psychotherapeutic intervention or both, in most cases. There are some psychotherapeutic interventions that have family stress management already embedded as one of their component, such as family focussed family therapy for bipolar affective disorder. Various types and grades of family interventions for different mental health conditions are also intended to reduce family stress.[16] Figure 3 shows the list of family interventions for various mental health conditions. Grief counselling may also involve the entire bereaved family and not just the person experiencing significant grief, also tends to reduce family stress. Similarly, improving work relationships for alleviating job stress have been noted to reduce family stress.[17]

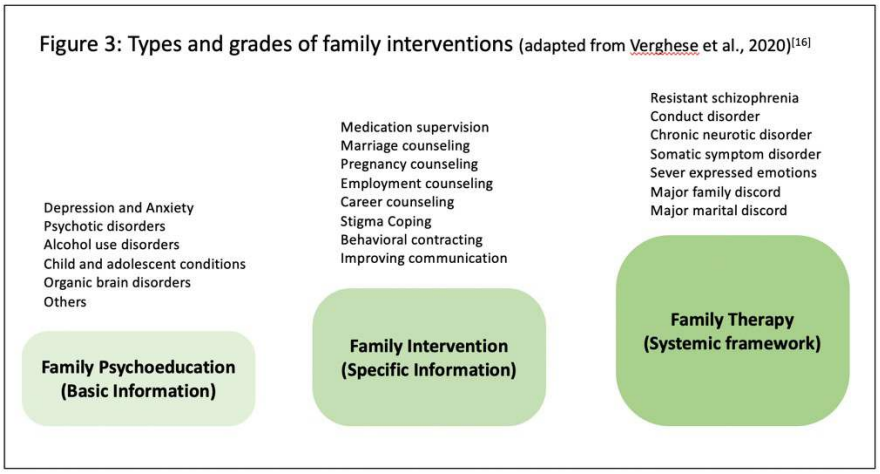

Figure 3: Types and grades of family interventions (adapted from Verghese et al., 2020)[16]

Alternately, managing stressors such as poverty, unemployment, etc., are managed at a more broader community level.

Step 5: Improve stress coping

Coping with family stress involves both individual and family coping. Various problem solving methods must be emphasized to the family in enhancing coping among family members.

In general, relocating existing resources for reducing the stressor must be the primary problem solving mechanism. These resources include time, finances, skills, support from members outside the family etc. For example, finances may be relocated from money saved from shifting from use of own vehicle to use of public transport to treatment of illness. And if the relocation of existing resources was also not sufficient, attempts at looking for new resources must be planned, e.g., bank loan for financial aid, etc.

By and large, the resources can be classified as internal and external. Bank loan, as mentioned here, is an example for external resource. Other external resources include support from members of the extended family as well as outside the family, spiritual practices, support from health care policies, etc. Treatment with medications and even the psychoeducation regarding the mental illness in a family member received from a mental health professional fall in the category of external resource. Internal resources include communication, care and respect among family members, coping abilities of individuals of the family, etc.

The internal resources focus on the emotional aspects of problem solving. Both individual as well as family coping mechanisms must be targeted. Support and unity among family members, reorganization of individual roles, decision sharing, etc, with respect to dealing with a particular stress form family coping mechanisms. Recognition, acceptance, preparation and planning at individual level are important domains of individual coping mechanisms.

For coping with stress at an individual and at the family level, the following may be advised[18-19](Table 5).

Table 5: Advices for coping with stress at an individual and at the family level

Individual Level		***Family Level***	
1	***Being realistic***. Not going overboard but rather relocate or try and find realistic alternate resources.	1	Having **open communication** and creating a healthy family environment
2	***Journal writing***. This helps ventilate emotional stress.	2	***Flexibility*** in roles and responsibilities
3	Involving in ***hobbies and regular physical activity***. Physical	3	Planning about and gaining ***access to***

	exercises have been shown to have significant effect on stress levels.		***resources*** in a ***collaborative*** manner
4	Practice ***relaxation exercises***. Activities such as deep breathing, yoga, mindfulness, etc., to be practiced.	4	Enhancing ***faith*** in the family members and performing ***spiritual activities*** together as a family
5	***Talking*** to others. Take time to talk to friends, neighbours, extended family members, others about issues may or may not be related to the ongoing stress.		
6	Maintaining ***good sleep***. This is an important point for preventing further consequences of stress		
7	***Focus on one thing at a time*** or change ***one habit at a time.***. Preparing a list of tasks according to priority, allocating particular timeline and then focussing on each, one after the other. And avoid multi-tasking.		
8	Coping by ***humor***. While laughter is a good stress buster, use of humor and laughter together are important to cope effectively		

The World Health Organization's illustrated guide on "Doing what matters in time of stress"[20] can be used as an useful guide for various coping strategies to overcome individual-level and family level stress.

Step 6: Enhance family resilience

It is necessary to understand that enhancing family resilience is from a point of view of being coping with ***future stress***. As the index family faced with family stress, it is assumed that the family has a ***vulnerability*** of facing significant stress to future events too. And therefore including strategies to assess and enhance family resilience has to be incorporated into every family stress management protocols. Mainly, three important domains are important to determine family resilience- communication/connectedness, positive outlook and perceived availability of external resources (See Table 6). Walsh (2016)[21] has also enumerated key processes in family resilience. Family Resilience can be assessed in clinical settings using the Family Resilience Scale Short Form (FRS16),[22] that assesses all three domains mentioned here.

Table 6: Factors determining family resilience		
1	communication/ connectedness	Ability to compromise on roles
		Ability to communicate with all family

	(shared decision making)	members
		Mutual decision making
		Defining stress positively
		Discussing until decisions are reached
		Respect and importance to every family member
		Clarity in decision making
2	Positive outlook	Confidence in solving major problems together as a family
		Accepting stress as part of life
		Accept the unexpected nature of stressful events
		Making meaning of adversity
3	Perceived availability of resources	Perceived support from members out of the family during crisis
		Perceived religious/spiritual support

Each of these aspects are targeted and enhancement in each of the domain found deficient in is sought using skill-building approaches. This aspect also called as the horizonal component in family resilience. Aspects of family coping strategies, considered part of the family resilience training, are called vertical component.

The horizontal component of family resilience enhancement can be guided using the practice descriptions of the FOCUS family resilience program, proposed by Saltzman (2016)[23] (Table 7).

Table 7: Practice components of the family resilience enhancement schedule

1	Eliciting family systemic goals	During the initial sessions, family members are provided a clear systemic formulation about the issues and how all the members have a role in the generation and management of current stress
2	Providing Family Psycho-Education and Developmental Guidance	Family members are educated about the developmental trajectory and age appropriate emotional and behavioral reactions of children in the family. In all cases, information and guidance are woven in conversation with family members, specific to their presentation and needs, thereby facilitating action.
3	Developing shared family narratives using timeline technique	A structured opportunity is given to each family member to describe their perception of upsetting events in a timeline technique (Parents → Children→Whole family). This whole process helps in rebuilding the communication, cohesion and support of the family members.

4	Supporting open and effective communication	Ensuring direct, clear, consistent, and honest communication between members and the capacity to tolerate open expression of emotion is the hallmark of a resilient family. The sessions are carried out to help them find appropriate ways of sharing of a wide range of feelings and respect differences.
5	Enhancing selected family resilience skills	Specific parent skill sets and family-level coping strategies can help families anticipate and mitigate the impact of stressful events and situational triggers and improve child adjustment. Within the sessions and at home family members build skills to collectively manage stress by identifying and anticipating stressful situations, monitoring idiosyncratic expressions of distress among different family members, and providing support in a timely and developmentally appropriate manner.

4. Challenges

Risk for continued family stress, despite application of stress management strategies, is dependent on various factors:

- Attitudes towards stress management sessions- that include their acceptance, their regularity with the sessions, support of other family members towards stress management strategies. In fact, the mental health professional delivering the stress management session/s also should take into account the resistance (or even denial of stress) of the family towards stress management strategies and use principles of motivation enhancement therapy/motivational interview to bring about the change in attitudes.
- The family/family members might already be using some coping strategies that may not be good or even may be 'ugly'.[24] Explaining the nature of 'wrong' in the coping strategies already being employed might meet with resistance.
- Demands of the family- the capability and capacity of the family members in dealing with the tasks suggested may be varied and some might show early fatigue.

5. Summary

A summary of recommendations we suggest is shown in Table 8.

Table 8: Summary of recommendations

1	A thorough knowledge of family stress and, family structure, environment and systems is necessary
2	We suggest 6-step family stress management strategy: 1. Identification of family stress and the stressor 2. Assessment of family environment/system and family adaptability 3. Assessment of family stress 4. Identify ways to reduce the stressor 5. Improve stress coping 6. Enhance family resilience
3	We suggest use of specific methods for assessment of family environment, family adaptability and family stress such as “Eco-maps”, Social Readjustment Rating Scale, etc.
4	We suggest different grades of family interventions for reducing the stress of mental health related conditions
5	We suggest various strategies to cope with stress at an individual and at the family level.
6	We then suggest practical components of enhancing family resilience

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CLINICAL PRACTICE GUIDELINES

DEVELOPMENT OF MENTAL HEALTH HUMAN RESOURCES FOR MENTAL WELL BEING

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INTRODUCTION

Mental health human resource forms the basic component of mental health service delivery in any sector. Mental health and well-being can be promoted by various ways among which focus on human resources is of utmost important. Mental health infrastructure can be conceptualized as the basic facilities which involves public works, underlying foundations and the network system needed to provide goods and services. Infrastructure related to health encompasses range of establishments needed to provide health care, like hospitals, other health establishments, non-governmental organizations and a service delivery system which runs integrated with these facilities. The various components of health infrastructure have been described in Figure 1.

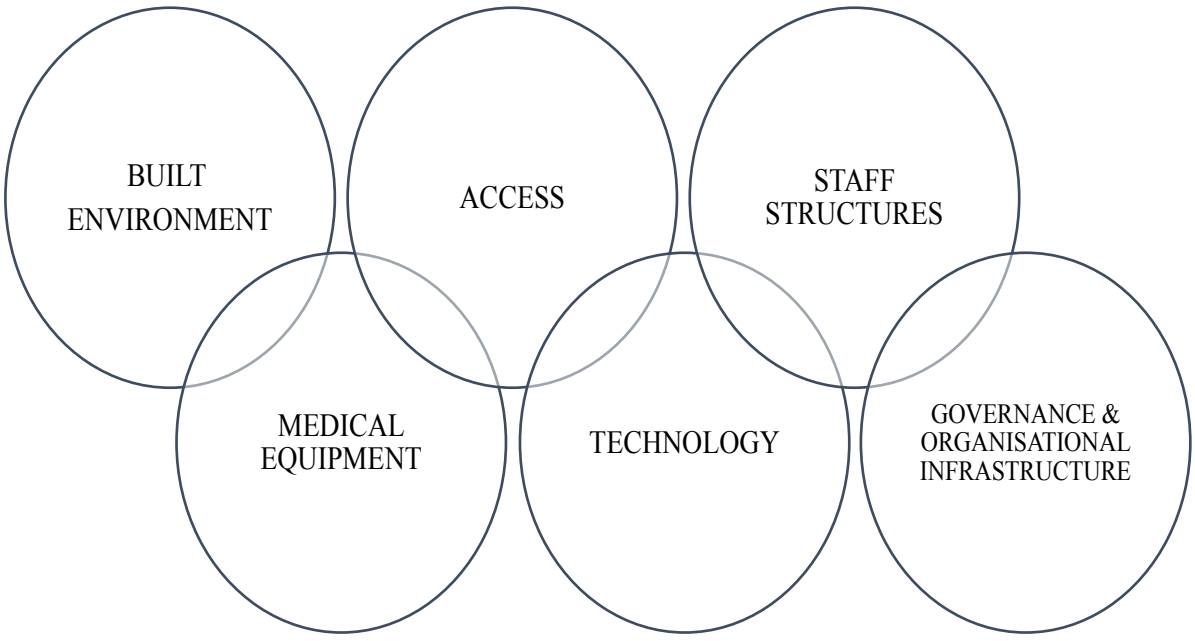

FIGURE 1: Various components of health infrastructure

As per World Health Organization(WHO) health system building blocks comprises of six sectors as described in Figure 2(2). An effective mental health system focuses on providing mental health services to all in need in the most effective manner, distributed equitably and which promotes human rights and health outcomes. It should integrate mental health services into primary health care and linking it to secondary care. We focus our discussion on the mental health work force and service delivery.

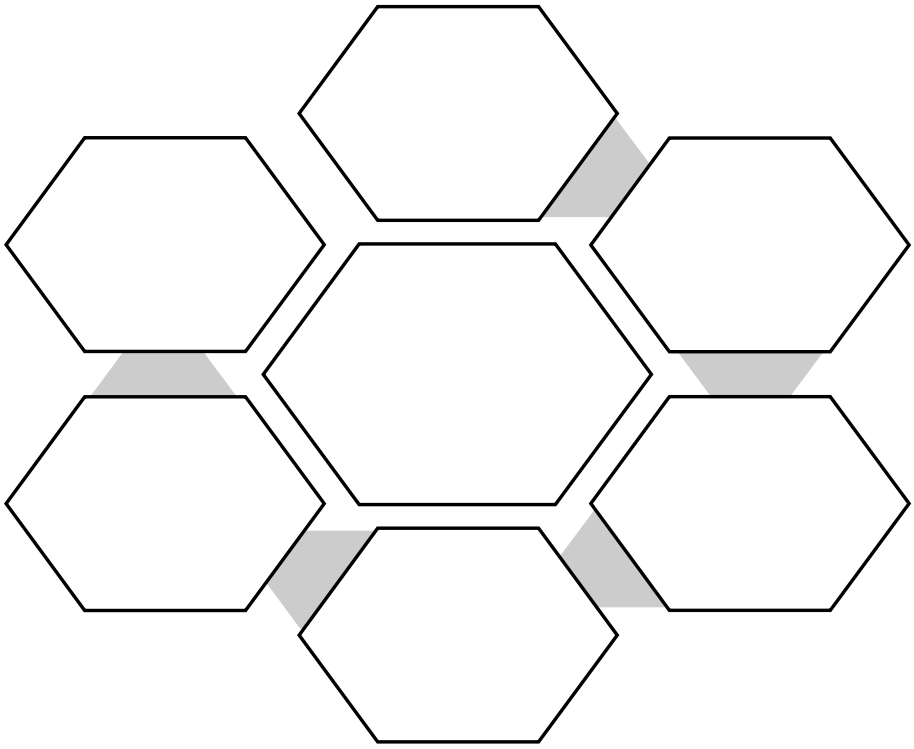

Figure 3 : Health system infrastructure and its building blocks

EXISTING MENTAL HEALTH INFRASTRUCTURE IN INDIA WITH FOCUS TO HUMAN RESOURCES

National Mental health Survey 2015-16(NMHS) (6) reflects that the mental health services in India are 'far from satisfactory'. Despite a sustained focus in improving mental health systems the translated changes appear very few. The treatment gap for mental health remains huge. The treatment gap in India is around 80% and the disability associated with Mental, neurological and substance use disorders (MNSuDs) was around 0.7% to 28.2%. The NMHS data on the existing infrastructure is indeed grave in India. Table 1 gives a snapshot of the infrastructure state wise.

Coverage of DMHP	
Districts covered by DMHP (%)	14.29% (Assam)- 100%(Kerala)

Population covered by DMHP (%)	14.20% (Madhya Pradesh)- 100 %(Kerala)	
Tribal population covered by DMHP (%)	3.99% (Uttar Pradesh)- 100 %(Kerala)	
Mental Health Care Facilities		
Mental hospitals	0 (Manipur)- 6 (Gujarat & West Bengal)	
Medical colleges with psychiatry department	1(Jharkhand)-28 (Uttar Pradesh)	
General hospitals with psychiatry units	2 (Jharkhand)- 29(Punjab)	
Mobile mental health units	Available only in Gujarat (4), Kerala (22) and Tamil Nadu (432)	
Day care Centers	2(Madhya Pradesh)- 137(Tamil Nadu)	
De-addiction units / Centers	2(Jharkhand)- 120(Tamil Nadu)	
Residential half way homes	1 (Assam and Jharkhand) – 43 (Tamil Nadu)	
Long stay homes	1 (Gujarat)-146(Kerala)	
Hostel (quarter stay homes)	Only in Gujarat and Manipur (1)	
Vocational Training centers	1 (Rajasthan)- 26 (Chattisgarh)	
Sheltered workshops	2 (Jharkhand)-6 (Kerala)	
Mental Health Human Resources (per 100000 population)		
Psychiatrists	0.05(Madhya Pradesh)-1.20(Kerala)	
Medical doctors trained in mental health	0.05(Madhya Pradesh)- 9.73(Manipur)	
Clinical psychologists	0.01(Rajasthan)-0.09(Tamil Nadu)	
Nurses trained in mental health	0.01(Punjab & Rajasthan) – 10.47 (Tamil Nadu)	
Nurses with DPN qualification	<0.01(Uttar Pradesh)-0.21 (Manipur)	
Psychiatric Social workers	0.01(Madhya Pradesh & Rajasthan)- 0.67 (Manipur)	
Rehabilitation workers and Special education teachers	0.05 (Jharkhand)-10.26(Kerala)	
Professional and Paraprofessional psychosocial counsellors	0.12 (Jharkhand)- 61.42(Manipur)	
Mental health sciences training		
Curriculum	**No.of Institutions**	**Intake per year**
MD Psychiatry	0(CT)-19(TN)	3(MN)-52(TN)
Diploma in Psychological medicine(DPM)	0 in most states 1 (WB)-5 (KL)	 2(UP)- 19(JH)
M.Sc. Psychiatric Nursing	1(JH)-37(TN &KL)	3(JH)- 164(KL)
M.Phil. Clinical Psychology	0(PB)-6(UP)	-
Social work	1(PB)-23(TN)	
M.Phil. (Psychiatric social work)	3(TN)	
Health Education Activities in Mental Health (percentage of districts where IEC activities were carried out)		
>50% of the districts	Kerala and Gujarat	
<50 % of the districts	Tamil Nadu, Assam, Manipur and Punjab	
Limited IEC activities	Madhya Pradesh, Jharkhand and Uttar Pradesh	
No activities	Chattisgarh	

Civil society organisation(s) in mental health	Mental Health NGOs functioning in all states except Jharkhand

Table 1: Findings of NMHS showing a snapshot of Infrastructure related to mental health

As per Mental Health Atlas 2020 the existing infrastructure and mental health systems in South East Asian region and Low and Middle income countries is depicted in Table 2 and information available from India in Mental Health Atlas 2017 has also been provided (7).

MENTAL HEALTH PARAMETER (per 100 000 population)	**SOUTHEAST ASIAN REGION (SEAR)**	**LOWER MIDDLE INCOME COUNTRIES (LMIC)**	**INDIA 2017**
Median numbers of outpatient facilities and visits	Facilities-0.21	0.18	Total 952
	Visits- 277.4	475.5	369.0
			Community-based / non-hospital" mental health outpatient facility- 1217 total, visits-11.1 Other outpatient facility (e.g. Mental health day care or treatment facility)-240 total, visits -1.82 Outpatient facility specifically for children and adolescents (including services for developmental disorders)-139, visits-5.01 Other outpatient services for children and adolescents (e.g. day care)- total 67, visits-0.33
Median percentage of visits to outpatient services, by sex	Female -47%	Female -46%	-
	Male -53%	Male -54%	-
Median number of mental hospital facilities, beds and admissions	Facilities -0.01	Facilities - 0.02	Total 136 mental hospitals
	Beds -3.6	Beds -3.8	Beds -1.43
	Admissions - 34.5	Admissions - 34.5	6.95
Median numbers of psychiatric units in general hospital facilities, beds and admissions	Facilities -0.13	Facilities - 0.06	Total 389 GHPU
	Beds -1.3	Beds -0.8	Beds -0.56
	Admissions - 30.1	Admissions - 7.1	Admissions -4.38
Median rate of total inpatient care	Facilities -0.16	Facilities - 0.09	Not reported
	Beds -3.0	Beds -4.4	

	Admissions - 76.3	Admissions - 59.8	
RESOURCES FOR MENTAL HEALTH			
Median number of mental health workers	2.8 Psychiatrists - 0.4 Mental Health Nurses-0.9 Psychologists - 0.3 Social workers-0.1 Other specialized mental health workers-0.4	3.8 Psychiatrists - 0.4 Mental Health Nurses-1.3 Psychologists -0.3 Social workers-0.2 Other specialized mental health workers-0.1	1.93 Psychiatrists -0.29 Child psychiatrists- 0.0 Mental Health Nurses-0.80 Psychologists -0.07 Social workers-0.06 Occupational therapists- 0.03 Speech therapists- 0.17 Other paid mental health workers- 0.36

Table 2 : Findings from Mental Health Atlas 2020 (for SEAR and LMIC) and 2017 (India).

DEVELOPING INFRASTRUCTURE

WHO has formulated a service delivery framework to help countries plan in organization of mental health services. Figure 4 is taken from WHO Mental Health Policy, Planning and Service development which depicts the pyramid model (8).It is interesting to note that the service of mental hospitals or GHPU involves a high cost and is less frequently needed but still remains the most commonly provided mental health service. Thus, there is a dire need of integration with primary health care, informal community care and promotion of self-help which involves low cost and is more in need.

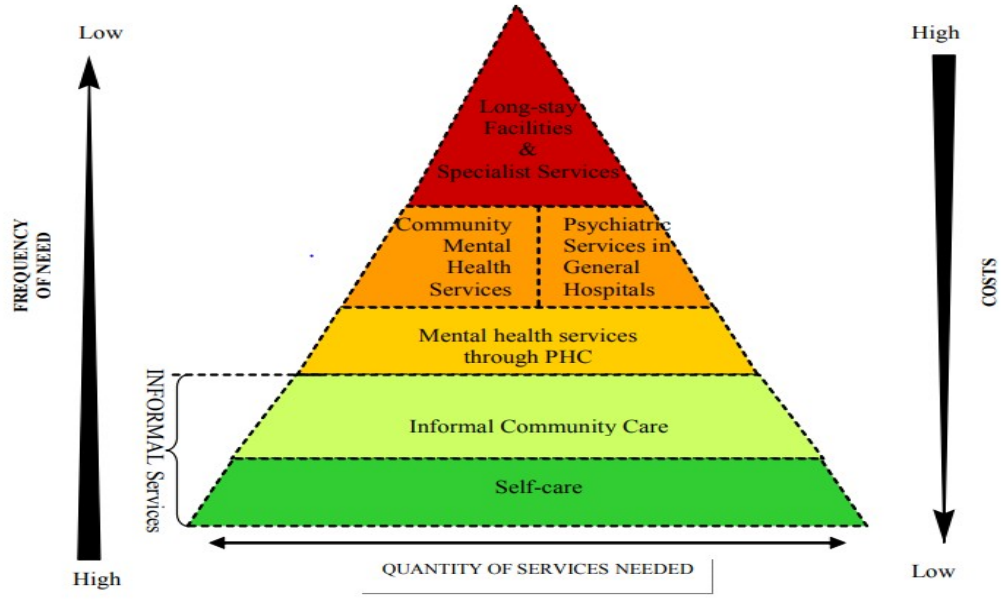

Figure 4 : Adopted from WHO showing the pyramid model for mental health service delivery

A. SELF CARE:

Promoting self-care can be one of the most cost-effective strategies in building mental well-being infrastructure. It involves people taking care of their mental health needs with help from available social support like friends and families. Self-care includes ability to manage stress, increase resilience, discuss and mitigate emotional problems and also have the knowledge of asking help when needed and source from where it can be sought. The main infrastructure development in this arena lies in creating awareness about various modes of self-care for mental health, providing information to people via various sources and channeling communication regarding the same (IEC activities) . Mental health literacy should be promoted by initiatives of both governmental and non-governmental sectors in a manner that it is available and accessible. Various strategies which can be implemented according are described subsequently in Table 3.

RECOMMENDATIONS FOR DEVELOPMENT OF SELF-CARE STRATEGIES:

Self-care strategies	**Identification of problem areas**	**Scope of Infrastructure development**	**Specific actions**
Limit contact with 'high risk' situations likely to negatively	Substance use	IEC activities regarding harmful aspects of substance use, possible risk of exposure to	1. Use television and radio to disseminate information. 2. Access to substance to be regulated to adolescents and the legal framework strictly

affect mental health		other high risk situations arising out of substance use like 'drink and drive'.	imposed. 3. Education about detriments regarding substance use be made a part of school curriculum for students of class 9-12.
	Unsafe sexual practices/ sexual risk taking	Sexuality education to be followed in school programs.	1. Basic idea of sexuality, sexual practices to be discussed as per curriculum. 2. Regular sessions regarding doubts about sexual practice to be focused and an open, non- judgemental attitude to be kept. 3. Knowledge of contraceptive methods to be imparted.
	Avoiding violent situations	Education about possible violent situations like road rage, mob violence.	1. Ways to avoid violence to be focused on. 2. How to handle situations of violence should also be discussed upon.
Develop skills to manage stress	Childhood and adolescent stress	IEC activities about promotion of mental health and ways of stress mitigation in child and adolescent. Avoid smoking and alcohol. Biological cycles to be made regula. Mitigating occupational hazards	1. Improve mental health literacy. 2. Imparting Life skills education. 3. Focusing on school health program and teach ways of stress handling like relaxation exercises, physical activities, Yoga. 4. Training of teachers to identify childhood stress and mitigate factors aggravating stress like bullying.
	Workplace related stress	Focus on the formation of psychological first aid groups in work place who can serve	1. All workplace having a substantial number of employees to have a mental health help-line and a psychological counsellor.

		as point of contact for mitigating workplace stress.	2. Gender based discrimination at work place should be properly handled 3. Engagement in Yoga and other physical activities as a part of an official work routine.
	Any other stress	IEC activities on various modalities of stress management and relaxation techniques.	1. Digital initiatives involving imparting knowledge of various relaxation techniques. 2. Use of mental health helpline numbers to mitigate stress at initial level.
Ability to discuss and manage emotional problems as they arise.	Not able to acknowledge and identify emotional problems.	IEC on common emotional problems for easy identification. Nationwide digital platform for discussing emotional problems.	1. Use of mental health helpline numbers. 2. Doing activities focusing importance of social support and networking. 3. Focusing on inner resilience and various ways of building it. 4. YOGA should be promoted as its an indigenous system of handling ang mitigating stress in India. The various benefits should be focused upon and services to be offered in a large scale fashion.
Know when to seek help and who to seek help from	Having low/no knowledge of existing mental health services.	IEC activities in community places sharing information about availability of various levels of mental health care and how each of them can be accessed.	1. Making people aware of the existence of a pan India mental health toll free number. 2. Posters displaying various symptoms of Common Mental Disorders and the resources from where help can be sought.

Table 3: Various self-care strategies, identification of problem areas, scope of infrastructure development and possible specific actions for promotion of mental health

B. INFORMAL COMMUNITY CARE

This involves services available in community but not a direct part of the 'formal' health system. Services at this level includes traditional healers, professionals who are in other sectors like education(teachers), legal framework (police), village health workers, informal family and social associations. Various Non-Governmental organizations working in various sectors other than health can also provide help in promotion of mental well-being of the community. This layer of the service delivery pyramid acts as a mid-way and helps in effectively caring for a bigger population and thus decreases the need of moving into the next level of pyramid. They also form a bridge for 'down-referral' as patients already treated for mental disorders and on treatment and maintaining well can be collaborated with such services to ensure compliance and prevent relapse. The advantage lies in that these systems are usually accessible and easily acceptable by the community as it is an integral part of it. The disadvantages are that the service quality is highly variable and there remain chances of human rights violation. So, they should not be in the 'core' of mental health services but should function as a useful complement to formal services and can work in alliance with them.

RECOMMENDATIONS ON DEVELOPMENT OF INFORMAL COMMUNITY CARE:

1. Incorporation of traditional healers in main stream mental health like Dawa-Dua program.
2. Training of teachers, police personnels and other various machinery of public welfare in basics of mental health as they are in a touch with huge general population.
3. NGOs serving in health sector other than mental health to incorporate mental health in all its aspects.
4. Usage of various settings like community meeting places – Gram panchayat or village Anganwadi centers-display of posters at such places; screening audio-visual interventions/films in village gatherings (as done in PRIME- Program for Improving MEntal health care – mental health care plan done in 5 countries including India-Sehore district of Madhya Pradesh).
5. Extension of programs already running in some parts of the country to other parts like MINDS Community Mental Health Worker Program where lay persons from the community are trained for screening at community level and providing basic mental health first aid.
6. ATMIYATA Project- Implemented in rural area of Maharashtra, it involves a two tier community led mental health initiative. The tier consists of "Atmiyata Mitras" belonging to various caste and religion based sectors of the village and trained to identify individuals in mental distress. The second tier consisted of "Atmiyata Champions" and are important members of the community (community leaders, former teachers etc) and are well known and easily approachable in the village. They are trained to identify individuals in mental distress and provide structured counselling. It utilizes digital tools like low cost mobile phones and Atmiyata app (has two versions- one for champions and other for general public). Programs on the same

model can be implemented on a wider scale in low resource settings to address the burden of Common Mental Disorders.

7. Chiri (Smile) program was launched by Kerala Government as a part of "Our Responsibility to Children" program . It is a community intervention connecting people with age group of 12-18 years. It was run by the volunteer student police cadets who identified children who need mental health support, directed them to community health workers and eventually connected them and their parents to mental health experts.

   Model like this shows that the involvement of informal services into mental health arena not only improves the outcome but also ensures their acceptability.

C. INTEGRATING MENTAL HEALTH SERVICES INTO PRIMARY HEALTH CARE

This level in the pyramid is one of the most crucial points of mental health service delivery in India. In India the various policies and programs of the Government focus on this aspect. The National Mental Health Program (NMHP) and District Mental Health Program (DMHP) forms the backbone of delivery of mental health services in India.

RECOMMENDATIONS FOR INTEGRATION IN ACCORDANCE WITH OPERATIONAL GUIDELINES OF MINISTRY OF HEALTH AND FAMILY WELFARE ARE (9) :

	INDIVIDUAL/ FAMILY/ COMMUNITY LEVEL	**HEALTH AND WELLNESS CENTRE-SUB HEALTH CENTRE LEVEL (HWC)**	**PRIMARY HEALTH CENTRE/ URBAN PHC (PHC/ UPHC)**	**HIGHER LEVELS OF CARE**
HUMAN RESOURCE	ASHA/ASHA Facilitators, Multi-purpose Workers (MPW -F/M, Community Health Workers (CHW)	Community Health Officers (CHO)	MEDICAL OFFICERS (MO)	SPECIALISTS
SERVICE DELIVERY	AWARENESS 1) Mental health conditions 2) Reduction of stigma 3) Prevention. 4) Services available	AWARENESS 1) Stigma reduction activities at individual and groups of MNS conditions. PROMOTION OF MENTAL HEALTH 1) Family enrichment programs.	AWARENESS 1) Stigma reduction IDENTIFICATION AND MANAGEMENT OF	Multidisciplinary care when needed. TELECONSULTATION

	5) General symptoms of common mental disorders and suicide ideation 6) Societal risk factors CASE DETECTION • Use CIDT tool and refer to HWN for screening • PHQ 2 to be used PSYCHOSOCIAL COMPETENCIES TO BE IMPROVED 1) Basic psychoeducation 2) Suicide risk assessment 3) Psychological first aid FOLLOW UP IN COMMUNITY 1) Healthy lifestyle tips 2) Treatment adherence support	2) School health programs, positive parenting, physical initiatives. COMMON MENTAL DISORDERS (CMD) 1) Screening/ identification 2) Psychosocial intervention 3) Referral and follow up SEVERE MENTAL DISORDERS (SMDs) 1) Screening/identification 2) Referral to PHC 3) Community based rehabilitation 4) Family based interventions 5) Self-help groups CHILD AND ADOLESCENT MENTAL HEALTH DISORDERS (C & AMHDs) 1) Screening/identification 2) Referral to PHC 3) Follow up SUBSTANCE USE DISORDERS(SUDs) 1) Screening/identification 2) Brief intervention / management 3) Harm reduction counselling 4) First aid response to overdose/intoxication 5) Referral to PHC for dependence . USE OF PHQ-9 1) For screening 2) For follow up DISPENSING MEDICATION AS PRESCRIBED BEFORE FROM HIGHER LEVELS. SUICIDE RISK	CMDs, SMDs, SUDs and C&AMHDs. SUICIDE RISK MITIGATION. REGULAR FOLLOW UP ANY UPWARD REFERRAL IF NEEDED.	FACILITIES can be used for access to service providers at higher levels. TELECONSULTATION FACILITIES for constant support and supervision of personnels working at lower levels.

		ASSESSMENT AND MANAGEMENT BY GATEKEEPERS. ESTABLISH LINKAGE WITH NGOs, OTHER GOVERNMENT DEPARTMENTS , FAITH HEALERS AND OTHER SECTORS.		

Table 4: Service delivery model for integrating mental health into primary health as per operational guidelines of Ayushman Bharat.

The major advantages and disadvantages of integrating mental health into primary health care are:

Advantages:

1. Accessibility- Primary health care is mostly close to where people live.
2. Less stigma- Seeking treatment from general health care is often less stigmatizing and that too in countries like India where having psychiatric disorders carries a huge stigma.
3. Acceptability – Services offered in general care setting are much more acceptable than being treated in a psychiatric facility.
4. Universal coverage- Treatment can be done for both physical and mental health problems at the same setting.
5. Majority of common mental disorders can be managed at this level.
6. Decrease the additional pressure on higher levels by both inappropriate refer and also late identification leading to more severe issues.

Disadvantages:

1.Need for a proper training and supervision of the human resources involved.

2. Proper support and ongoing assistance to be given to workers at this level as many a times they feel unequipped and are reluctant to prescribe psychiatric medication.

3. Availability of psychiatric medications to be done at this level with smooth running of its supply, storage and distribution is difficult.

The mental health gap intervention guide(mh-GAP IG) released from WHO (10) can also serve to be an excellent resource to train non- specialists in mental health care. It provides evidence- based guidance and tools for assessment and integrated management of mental, neurological and substance disorders buy using clinical decision making protocols. It is highly effective and needs only 5- 7 minutes for application. A systematic review of the implementation of the guide in various LMIC countries have already shown promise for training a huge population of non-specialists (11).

RECOMMENDATIONS AS PER WHO mhGAP INTERVENTION GUIDE ARE :

Modes of using the guide	Involvement of infrastructure and resources (as per mhGAP IG)
Local adaptation of the guide for training the informal health service people available	1) University students and volunteers can be involved for identification and referral of students having mental health problems. 2) Substance use and their harmful effects can be trained through the corresponding module. 3) Relaxation techniques can be trained to these volunteers for stress management. 4) Gatekeeper training program for suicide prevention can be planned at regular intervals. 5) Importance of community responsibility and an emphasis on commitment.
Training of non specialists	1) Training of primary health care workers using specific designed course in a time specified manner. 2) Training in assessment and management of common mental health conditions and conditions related to stress. 3) Training of general doctors posted in PHCs by sequential training of mh GAP basic course , followed by 6 months supervision and mentor ship and then training in mhGAP advanced course.
Clinical practice at primary care settings	1) Can serve as a helpful modality for clinical assessment of mental health problems. 2) Focus on the modules which are commonly presented like depression , suicide/self harm, alcohol use disorders, psychosis.
Digital initiatives like apps and other gadget based technological advances	1) Development and use of mobile applications launched by Government or non- governmental initiatives which help in using digital technologies to detect mental health problems at initial level. 2) Other tablet based initiatives where the guidelines would be present in the working place and associated decision making could be done through usage of the embedded guide-can be made available for common mental disorders atleast. 3) mh-GAP IG app- official e-version of the World Health Organization's mhGAP-Intervention Guide was last updated on November 2020but needs an update for later versions of android to make it easily available for use by all.
Training of specialist para medical force in sub-speciality areas	1) Training programs on child and adolescent mental health issues, mental health issues in elderly population and other special groups can be focused upon.

Table 5: Modes of infrastructure development as per mhGAP intervention.

RECOMMENDATIONS FOR IMPLEMENTATION INCLUDE :

1. Establishing implementation team (Box 1)

1. A dedicated team depending upon the geographical area to be covered should be made with proper delineation of purpose and responsibility.
2. Utilizing already available team resource can be helpful.
3. Should include members from other sectors like civil society, policy makers, service providers etc.
4. The task can be subdivided in task-forces and clear identification of their function

Box 1 : Steps of establishing an implementation team

2. Situation analysis (Box 2):

1) Analysing the need and gap of resources and the available resources.
2) The belief systems and cultural connotations of mental health disorders to be taken into account.
3) The general pattern of health seeking behavior in that population.
4) Existing national policies.
5) Identifying possible barriers.

Box 2 : Situation analysis

3. Implementation plan proper (Box 3) :

1) WHERE- facilities where implementation to be done.
2) WHEN- timeline of adaptation, training schedules, supervision activities
3) WHAT- resources needed and available- financial, human and infrastructure
4) WHO- who will be trained and existing knowledge base of the trainees
5) HOW- improving communication across different systems

B

4. Adaptation strategies (Box 4) :

1. The protocol should be made acceptable as per the local context by using local terms and usage of IEC materials should be in line with existing mental health policies.
2. Different stakeholders to be involved.
3. Experts from relevant disciplines to be involved.

Box 4 : Adaptation strategies

5. Training and supervision (Box 5):

i) Needs co-ordinated effort both from specialists and non-specialists.
ii) The duration should be determined as per the local adaptation and existing knowledge.
iii) The training can be imparted by a cascade plan where a master facilitator trains 'trainers' who in turn trains the non-specialist front line health workers.
iv) The trainers should be specialists in mental health and also be good facilitators and problem-solvers.
v) Supervision should be done by trainers to assist that the skills and

Box 5 : Training and supervision

6. Monitoring and evaluation

i) Need to assess whether the training does any impact or not.
ii) Collection and analysis of data from all levels to be done.
iii) Statistics of indicators like percentage of non specialists trained, facilities with uninterrupted supply of medicines, number of support and supervisory visits to each health facility etc to be monitored at intervals.

Box 6 : Monitoring and evaluation

D. MENTAL HEALTH SERVICES IN GENERAL HOSPITALS

General Health Psychiatric Units (GHPUs) are the psychiatric wings of a medical college or general hospital. It is in line with the essence of NMHP where integration of mental and physical health care is emphasized on. They now serve as the main resource for training and research in mental health in India. The main disadvantages lie in the fact that acute management needs to be followed by adequate rehabilitation services which are lacking in this setting leading to a revolving door phenomenon. Also, such hospitals are still scarce and are mostly in big cities leading to a hindrance in accessibility.

RECOMMENDATIONS REGARDING GHPUs INCLUDE:

1. Incorporation of psychiatric care in General hospital setting helps in hospitalization during acute phase of illness without stigma per se and co-morbid physical conditions can also be managed along-side. Strengthening of GHPUs have always been a focus in NMHP. There has been upgradation in infrastructure and equipment in this setting to upgrade the training resources for both undergraduate and post graduate students. The main focus in this sphere lies in building up and shaping the human resources to meet the unmet workforce requirement needed for adequate mental health service delivery.

2. Manpower development schemes (Scheme-B of NMHP) also involves this level. Government Medical Colleges/ Government Mental Hospitals are being supported for starting / increasing intake of PG courses in Mental Health under NMHP The current focus in building more human resources trained in mental health is one of the backbone in strengthening human resources. The current mental health infrastructure in terms of human resource and bed ratio is bleak in our country. The various ways of specialist man-power development by strengthening post-graduate curriculum is discussed later.

E. COMMUNITY MENTAL HEALTH SERVICES

This includes day care centers, rehabilitation services, hospital diversion programs, mobile crisis teams, group homes, supervised residential services. Combination of approach as per need is an absolute necessity. The need for hospitalization or prolonged hospitalization can be effectively minimized by this level of infrastructure. Lack of effective community mental health service leads to prolonged institutionalization, or landing up being homeless. Effective collaboration with other services like primary care, informal and general hospital services is a dire necessity.

RECOMMENDATIONS FOR THIS SERVICE INCLUDE :

1. Day care centers : Provides rehabilitation and recovery services to persons with mental illness so that the initial intervention with drug & psychotherapy is followed up and relapse is prevented. Helps in enhancing the skills of the family/caregiver in providing better support care. Provides opportunity for people recovering from mental illness for successful community living.
2. Residential/ Long-Term Continuing Care Centre: Chronically mentally ill individuals, who have achieved stability with respect to their symptoms & have not been able to return to their families and are currently residents of the mental hospitals, will be shifted to these centers. Residential patients in these centers will go through a structured program which will be executed with the help of multidisciplinary team consisting of psychologists, social workers, nurses, occupational therapists, vocational trainers and support staff.

F. LONG STAY FACILITIES AND SPECIALIST SERVICES

Mental hospitals should be limited and deinstitutionalization should be planned. High costs, poor clinical outcomes, violation of human rights poses as problems in mental hospitals and thus spending on them the scarce financial resources available for mental health is disadvantageous.

RECOMMENDATIONS AT THIS LEVEL INCLUDE:

1. The process of deinstitutionalization is important but a gradual and planned approach is necessary and proper availability of other resources needs to be ascertained before it. Otherwise, there are chances of marginalization and homelessness.
2. The mental hospitals are being upgraded to Centers of Excellence in Mental Health under Manpower development Scheme A of NMHP. It plans to start/ strengthen

courses in psychiatry, clinical psychology, psychiatric social work & psychiatric nursing.

3. Up-gradation of two Central MH Institutes to provide Neurological and Neuro-surgical Facilities on the pattern of NIMHANS (CIP, Ranchi & LGB, Tezpur) is also on way.

RECOMMENDATIONS FOR INCORPORATION OF PERSONS WITH MENTAL ILLNESS (PWMI) IN MAIN -STREAM SOCIAL LIFE :

- Provision of employment as per educational qualification, current cognitive status-patients can be rehabilitated to their ongoing employment or can be employed in areas where the patient can currently function. Governmental initiatives in placement of jobs for persons with past mental illness in remission can be helpful.
- Housing of patients by provision of various housing schemes for a proper rehabilitation.
- Support group interventions like self-help groups leading to improved coping skills , acceptance of illness, adherence to medications like Alcoholic Anonymous to be promoted in community level.
- Focusing on the role of family in PWMI by family therapy and other interventions involving family to be planned in community level.
- Crisis resolution and home-based treatment (CRHT) is a community model of mental health care delivery which is non-existent in India where care is provided by a multi-disciplinary team at home setting. A model was adapted by GMCH , Chandigarh which covered more than 250 families and the initial review showed that ii is cost-effective, feasible and replicable.

DIGITAL MENTAL HEALTH INITIATIVES

The current digital mental health initiatives in India and their salient points with focus to the scope of infrastructure development is discussed in Table 6.

DIGITAL PLATFORM	SALIENT FEATURES	SCOPE OF INFRASTRUCTURE DEVELOPMENT
MANAS (Mental Health and Normalcy Augmentation System) Tele- MANAS	Launched by Government of India on 14th April 2021. Initial mobile app version launched to encourage positive mental health in the 15-35 years age group. Tele MANAS -current comprehensive mental health care service with a toll free number (18008914416) which provides free access to the counsellors. (Currently 51 Tele Manas cells,23	Increasing the coverage by training more mental health professionals (training of trainers) who in turn can serve to be nodal persons for training. IEC activities to spread the knowledge of such a toll free number to be existing and promoting people to seek help if needed (usage

	Mentoring Institutes and 5 Regional Co-ordinating centers) Scaling up mental health resources, video consultations and implementation of full-fledged mental health service network and extending services to vulnerable groups and remote locations are the main objectives.	of flyers available in official website can be used). Integration with e-sanjeevani needs to be more smooth. Networking to ensure that the callers who need help from specialists are linked to the nearest available in person mental health facility.
E- Manas Karnataka (Mental Health care Management System)	Comprehensive mental health management system with 4 modules. Launched by Karnataka State Mental Health Authority. Health information to be integrated at one place and thus can be accessed with consent.	Integration between the modules need to be seamless. Data security to be ensured as patient details are available.
ESSENCE (Enabling translation of Science to Service to Enhance Depression Care)	Launched by Sangath, Goa based non profit organization. Funded by US National Institute of Mental Health. Collaborations between Harvard University, various partners in South Asia and Government of Madhya Pradesh. Main focus on training of community level workers via digital methods and comparison with conventional methods.	Can be extended to other states to train their health staff if funding is feasible.
Amma Manasu (Mother's Mind)	Maternal mental health program launched by health Department of Kerala. Addresses women mental health during pregnancy and post -partum. Mother and Child tracking system is utilized and mental health care is linked to regular ante natal and post natal visits.	Use of this model can be very helpful in identifying and early diagnosis of maternal mental health issues. An easy 4 item questionnaire to screen parental stress/ depression can be made part of all antenatal and post natal visits so that maternal depression is pickled up early.
NIMHANS ECHO Model(12)	Hub and spoke tele-mentoring model aimed to bridge the urban rural divide. Counsellors from rural and	Project ECHO is the extension of the project to build capacity in reducing disparities between urban

	underserved districts of Chattisgarh were periodically mentored by NIMHANS multidisciplinary specialists by smartphone app. Focus on patient centric learning in mental health and addiction.	and rural areas.
Clinical Decision Support System (CDSS)	Initiated by Dept. of Psychiatry PGI Chandigarh, and involving remotes sites from Northern India. It is an online fully automated system with interlinked modules for various stages of diagnosis, treatment and follow up.	Integration of digital technology and information and communication technology for delivering clinical psychiatry in primary and secondary health care settings can serve as a model.
Systematic Medical Appraisal , Referral and Treatment (SMART) Mental Health Project	Initiative by George Institute for Public Health. Carried out in West Godavari District, Andhra Pradesh Technology enabled electronic decision support system (EDSS) was used to deliver mental health services by primary health care workers.	Digital technology can be used for the purpose of screening mental disorders.
POD Adventures	Developed as apart of project PRIDE, one of the world's largest adolescent mental health research programmes at Sangath. Lay counsellor guided problem solving intervention through mobile app	App development targeting problem solving steps – problem identification, option generation and creating a 'Do it 'plan for adolescent health group is an excellent option and can be taken up as initiatives in a larger scale.
Mann Mela	First digital museum aimed at addressing mental health issues faced by youth of India. Describes mental health stories using art and technology to exhibit first person stories of mental trauma, breaking stigma and recovery.	Very innovative in addressing adolescent issues.
HELPLINES UMMEED (HOPE)	By Government of Rajasthan a dedicated helpline for children through a toll free number 0141-4932233. Children can directly speak with counsellors and seek support. Parents can get counselling on engaging children in recreational	Children dedicated helplines should also be made at national level to handle various child and adolescent mental health needs.

	activities.	
Muskurayega India (India will smile)	Ministry of youth affairs and Sports, Govt of Uttar Pradesh with various other Governemnt sectors. Mental health counsellors providing tele- counselling support to students and general public.	
DELHI CARES	Initiative by Delhi Commission for Protection of Child Rights (DCPCR), Targeted at school students under mental stress due to and post COVID-19.	
Toll free number as mental helpline numbers at a nodal level and also institute level for all medical, paramedical and nursing colleges in the state of West Bengal.	A novel initiative of West Bengal University of Health Sciences. Have also published a mental health awareness booklet for all students.	Can be applied to all health universities and also other universities and institute level.

Table 6: Various digital mental health initiatives in India

RECOMMENDATIONS FOR DIGITAL INITIATIVES ARE :

1. MANAS app developed by Government of India to be extended to all age groups including children.
2. State governments can work on state level initiatives like ‘e- Manas’, ‘ Amma Manasu’ for their own states to upgrade mental health service delivery.
3. Imparting training to primary level workers can be planned through digital initiative like NIMHANS Echo model.
4. Tele counseling support to students(like initiative of WBUHS) should be promoted widely.
5. Use of technology-based solutions can be innovative ways of handling resource limitation and public- private partnerships in this regard needs to be strengthened.
6. Artificial Intelligence (AI) based mental health initiatives can also be a way forward as it would help in access to treatment without stigma and in the scanty available

resources. But there remains a chance for its inadequacy as the parameters taken in AI is not well explained yet.

FUNDING FROM GOVERNMENT AND SCOPE OF DEVELOPMENT

As per the latest Public Information disseminated by Ministry of Health and Family Welfare on 4th February 2022 Government is supporting implementation of DMHP under NMHP in 704 districts in India with a financial assistance of upto Rs.83.20 lakhs per district per year. Centre of excellence upgradation done for 25 centres and 19 Governmental Medical Colleges were strengthened to focus on 47 PG Departments in Mental Health specialties. The financial support for establishing each Center of Excellence was increased from Rs. 30 crores (in the 11th Five Year Plan) to Rs 36.96 crores per centre. Sufficient financial assistance extended to the three central institutes – NIMHANS Bengaluru, CIP Ranchi and LGBRIMH,Tezpur.

RECOMMENDATIONS FOR EFFECTIVE FUND UTILISATION

- Ensure implementation of the fund allocated to each district by constant monitoring and supervision.
- Focus on Man-power development by training in mental health both in post graduate and under graduate level.
- Financial resource allocation should be also decentralised as majority of mental health budget is allocated to specific institutions.
- Focus on decreasing the out of pocket expenditure for mental illness which would lead to better coverage and utilization of resources.
- The government's total expenditure on mental health as % of total government health expenditure is mere 1.30(Mental Health Atlas 2017) which can be increased.

SPECIAL INITIATIVES FOR CHILDREN AND ADOLESCENTS

Children and adolescents form the backbone of future society and mental health and well-being should be nurtured from an early stage to ensure active participation in the society.

RECOMMENDATIONS IN ACCORDANCE WITH NATIONAL EDUCATION POLICY BY MINISTRY OF EDUCATION(13).

1. Taking a Whole School approach which involves prevention, promotion and management of mental health and well-being.
2. Training of teachers and other resource person in schools about flag signs, risk factors and what they can do in childhood mental health issues and concerns (like attachment issues, separation anxiety, school refusal, communication issues, inattention and hyperactivity, conduct issues, excessive internet use, intellectual disability, specific learning disability, autism spectrum issues or anxiety, depressive states).

3. Training of teachers in adolescent mental health issues and concerns (body image, self-esteem issues, psychosomatic concerns, bullying, conduct and delinquency, loss and grief, gender identity, relationships, problematic internet use, anxiety and depression.
4. Teachers to be trained to handle emotional and behavioral emergencies in schools like child sexual abuse, aggression and violence, substance use and other addictive behaviors, self-harm and suicidal behaviors.
5. A collaborative approach among parent-teacher-counsellor and student.
6. Various checklists to screen or diagnose early identification of childhood issues to be used by teachers.
7. Mental health promotion and awareness through posters already provided in the guide.
8. Life skills training through life skill education and 'Peer educators'.

SUICIDE PREVENTION

National Suicide Prevention Strategy was launched by Ministry of Health and Family Welfare on November 2022- the first of its kind in the country with a target of achieving reduction in suicide mortality by 10% by 2030. From 2019-2022 the suicide rate has increased from 10.2 to 11.3 per 100000 population with the highest frequency in daily wage workers.

RECOMMENDATIONS AS PER NATIONAL SUICIDE PREVENTION STRATEGY:

The various initiatives involve establishing an effective surveillance mechanism by next 3 years, establishing psychiatric OPDs in all districts through DMHP within the next 5 years. It also aims in integrating a mental well being curriculum in all educational institutions in next 8 years and developing guidelines for responsible media reporting of suicides and restricting access to means. The Ministry of Social Justice and Empowerment has launched a 24/7 toll free helpline "KIRAN" and the Ministry of Education has launched "Manodarpan" as part of suicide mitigation.

STRENGTHENING POST GRADUATE (PG) CURRICULUM FOR MAN-POWER DEVELOPMENT AS SPECIALIST RESOURCES

National Medical Commission has focused on competency based PG curriculum and also the quantity and quality of training has been a point of discussion. There are various areas of concern like quality assurance pan institutions, less or no focus on newer modalities of treatment like rTMS, tDCS, variance of training received in GHPUs vis-à-vis Mental Hospital based training centers, lack of training in neurology, lack of objective assessment techniques and issues related to teachers training (14).

RECOMMENDATIONS:

1. Psychiatry training should focus on providing ethical, evidence based diagnosis and treatment to patients.

2. Enough competency and focus on trainees having adequate teaching skills, research methodology and epidemiology.
3. Listening and communication skills to be focused upon.
4. Knowledge about Developmental psychology and childhood disorders , sleep disorders, sexual disorders should be adequate.
5. Adequate skill about Electroconvulsive therapy and its application should be ensured.
6. All subspeciality knowledge should be adequate enough for proper diagnosis and treatment.
7. Management of alcohol withdrawal syndromes and other common psychiatric emergencies should be focused upon.
8. The mandatory requirement of psychiatry teachers in a psychiatry department is very less and with all ongoing duties of faculties it is much necessary that the minimum requirement may be increased for adequate training.

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Title: Mental Health and Wellbeing for Prevention of Substance Use Disorders

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Title: Mental Health and Wellbeing for Prevention of Substance Use Disorders

Introduction

Mental health is defined as *"a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community."*

Well-being is defined as *"a good or satisfactory condition of existence; a state characterized by health, happiness, and prosperity; welfare."* It encompasses but is not limited to physical, emotional, social, occupational and economic well-being.

The relationship between use of substances and well-being is complex. Historically, the normative use of different substances has been documented in cultures across the world. Substances (such as cannabis and psychedelics) have been used as a means to heighten spiritual experiences, gain greater insight and understanding about the world and enhance well-being. They have also been used in healing rituals by medicine men or shamans. In recent times, substance use (particularly alcohol and cannabis) in social contexts is common. A cross-sectional study which used data from the Danish National Youth Study 2019 (25,910 students aged 15-25 years) found that there was a U-shaped association between weekly alcohol consumption and poor well-being e.g. students who never drank, students who only drank occasionally, and students who drank a lot (22 units of alcohol or more a week) had higher odds of poor well-being, compared to the reference group (1-7 units a week) (1).

The relationship between excessive use of substances/substance use disorders (SUD) and decreased well-being is indisputable, with the relationship appearing to be a bidirectional one. This is borne out by a study in a random national sample of 9493 adolescents aged between 12-18 years recruited as part of My World Survey 2 - Second Level (MWS2-SL) which found that the 'low' health-promoting cluster was characterised by high alcohol, cannabis and social media use, moderate sport and hobby participation, and low sleep duration. They also demonstrated the highest levels of anxiety and depression and the lowest levels of life satisfaction, self-esteem and daily functioning (2).

Etiology of SUD

There are a number of etiological factors which seem to be associated with the development of SUD. Figure 1 provides an overview of these factors and how they can contribute to risk of developing SUD.

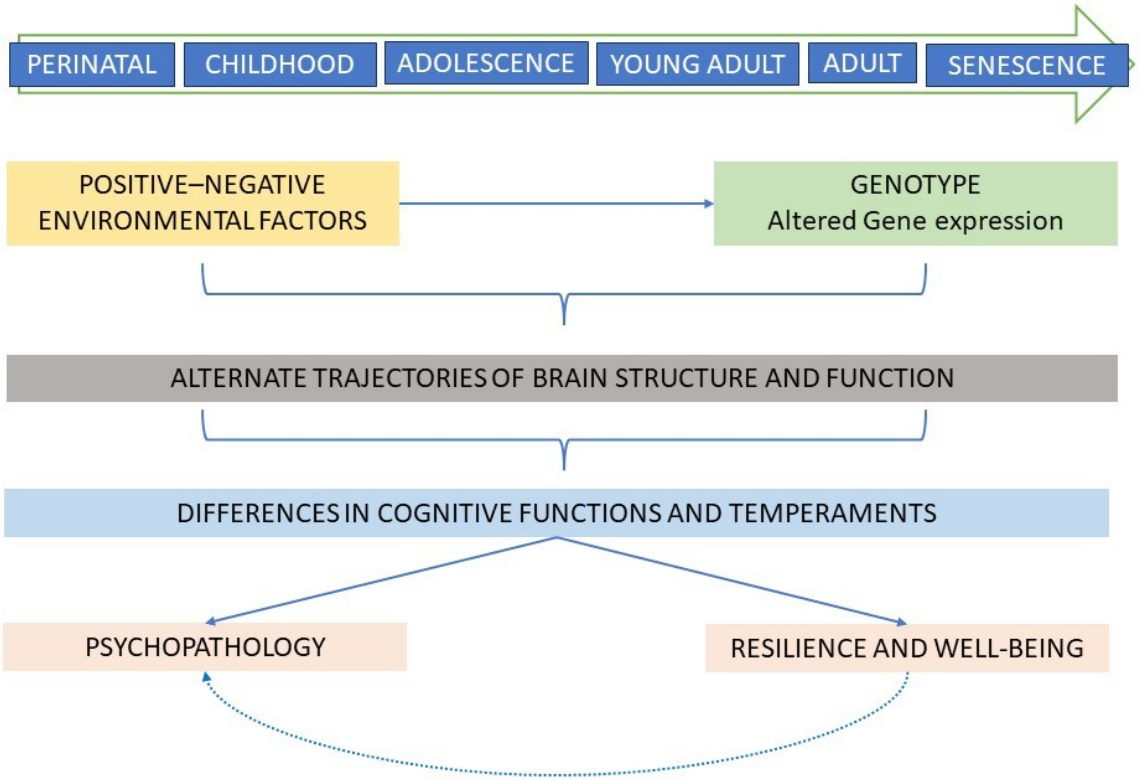

Figure 1: Framework for understanding etiology of psychiatric disorders including SUD

It is important to recognise that a number of the factors outlined confer risk or protection for a range of mental health conditions, including psychosis, depression, anxiety and SUD. Further, they seem to operate from the antenatal period through infancy, childhood and adolescence, long before the symptoms of mental illness become apparent. This risk/protection is likely mediated by deviations in the normative trajectories of brain structure, function and neuropsychological functioning which are also transdiagnostic in nature. This in turn leads to differences in temperament, which can increase the risk of development of psychopathology. These same factors are also likely to contribute to resilience and well-being. This framework can also be used to study the effect of preventive interventions which modify these risk and protective factors.

Preventive Interventions for SUD

The Institute of Medicine (IOM) classifies preventive interventions based on the level of risk into:

- Universal (targeting the population in general)
- Selective (targeting those at higher-than-average risk for substance use, eg: children of substance users)
- Indicated (targeting those who are already using substances or engaging in high-risk behaviours)

The Centre for Substance Abuse Prevention (CSAP) further identifies six domains where risk and protective factors can operate namely:

- Individual
- Family
- Peer
- School
- Community
- Society/environment.

In this section, we will describe interventions across different developmental stages and further divide them based on the risk level and the domain of the intervention. The impact of these interventions will be described on both intermediate outcomes such as neurodevelopment and terminal outcomes, such as wellbeing and psychopathology, with a focus on substance use. We will also summarise the certainty of the evidence for each type of intervention using the GRADE (Grading of Recommendations, Assessment, Development, and Evaluations) (Table 1). We feel that this will serve as a way to both review the current evidence and also highlight the gaps in the same, which can guide future studies.

Table 1: GRADE certainty ratings

Certainty	**What it means**
Very low	The true effect is probably markedly different from the estimated effect
Low	The true effect might be markedly different from the estimated effect
Moderate	The authors believe that the true effect is probably close to the estimated effect
High	The authors have a lot of confidence that the true effect is similar to the estimated effect

<u>Pre-natal and Antenatal Interventions:</u>

There is accumulating evidence that health related factors such as nutritional deficiencies, obesity, substance use, infections/inflammation, exposure to environmental toxins; and psychosocial factors such as exposure to intimate partner violence and psychopathology, including anxiety and depression during pregnancy can affect neurodevelopment and are associated with the development of internalizing and externalizing psychopathology in childhood (3). Given that these factors predispose individuals to develop SUD, interventions to address them in the pre-natal, antenatal and postnatal period, may reduce the future occurrence of SUD. The interventions in this section are mostly universal and delivered to pregnant mothers although fathers may also be involved in certain cases. The evidence for these interventions directly influencing terminal outcomes such as wellbeing and substance use is sparse, since most of the studies described have not followed up children into adolescence and adulthood.

Nutritional Interventions

A large longitudinal study from Central America clearly showed that nutritional interventions starting in the antenatal period till two years of age was associated with

improved neurodevelopmental and neurocognitive outcomes starting from infancy, into early and middle childhood and adolescence and young adulthood (4). It was also associated with enhanced executive functioning and psychological wellbeing in adulthood (5). However, as demonstrated in another study from Latin America, providing nutritional counselling alone may not be sufficient with no differences in intelligence, mental health or alcohol use and smoking among adolescents in the treatment and control groups (6). This underlines the role of maternal micronutrient supplementation to both treat nutritional deficiencies and also in certain cases to mitigate the effects of environmental exposures, such as substance use or infections. This may help to prevent the future occurrence of mental illness (7) and also enhance wellbeing.

Prenatal and antenatal iron and folic acid supplementation seems to have a positive impact on neurodevelopment in infancy and early childhood (8,9). These effects also seem to persist into adolescence, as seen in a 14 year follow-up of a large RCT from rural China which compared multiple micronutrient supplementation (MMN), iron and folic acid (IFA) supplementation and folic acid supplementation alone, which found that the MMN and IFA group showed improved measures of intellectual development (10) and also reduced levels of total and externalising psychopathology (11).

The evidence for B-complex vitamins is less consistent. A small RCT conducted in India found that B12 supplementation from pre-conception to delivery was associated with better neurodevelopmental outcomes at 2 years of age as compared to placebo (12).

There was no association between ω-3 long-chain polyunsaturated fatty acid, docosahexaenoic acid (DHA) supplementation and childhood behaviour or cognitive development (8,13).

A number of longitudinal studies have shown a link between lower maternal choline concentrations and poorer performance on attentional and processing speed tasks in early childhood (14,15). A review of uncontrolled interventional studies found that higher maternal choline intakes during the second half of pregnancy and early postnatal period (550 to 1000 mg/day, apart from diet) demonstrated favourable effects on several domains of child neurocognition, such as memory, attention, and visuospatial learning versus the comparison groups (16). A small RCT comparing choline supplementation at 480mg/day to 930mg/day in the third trimester of pregnancy found that mothers of children receiving 930mg/day had improved performance on sustained attention tasks at 7 years of age (17). In addition, maternal choline supplementation may ameliorate some of the cognitive problems seen in offspring born to alcohol exposed pregnancies (18,19).

Psychosocial Interventions

Evidence from longitudinal cohort studies have highlighted the association between antenatal maternal depressive and anxiety symptoms and infant and child development (20) and internalizing and externalizing psychopathology (21,22). These are likely to be mediated by epigenetic changes (23) which may influence brain structure and function (24). Further, exposure to stressful life events and

intimate partner violence during pregnancy is also associated with child executive functioning problems and externalizing problems, a relationship that was moderated by maternal parenting quality, such that higher parenting quality is protective for the associations between stressful life events and outcomes in the child (25). This emphasises the importance of interventions that can reduce stress, enhance wellbeing and address depression and anxiety in pregnant mothers.

Parenting/Family Interventions

A meta-analysis evaluating the effect of universal prevention interventions among 2559 pregnant women found that there was a moderate effect of preventive interventions implemented during pregnancy on maternal distress, depressive symptoms, and stress. The effects were not associated with intervention timing, intervention type, intervention delivery mode, timing of post-test, and methodological quality (26).

Another meta-analysis on the impact of parenting interventions on symptoms of perinatal depression and infant outcomes found significant reductions in maternal depressive symptoms at post-intervention for mothers allocated to receive parenting interventions. For both studies, data on infant development outcomes from the were scarce, and therefore, not analysed (27).

Summary And Recommendations:

Nature of Intervention	Outcome	Recommendation
Nutritional Interventions		
Iron Supplementation (Maintaining Sr Ferritin above 30 mcg/L, CBC at first ANC, 24 and 36 weeks)	Cognitive Performance	High Certainty
Choline at 500mg/day during 2nd and 3rd trimester of pregnancy	Cognitive Performance	Moderate Certainty
ω-3 long-chain polyunsaturated fatty acid (DHA) at 400mg/day during 2nd and 3rd trimester of pregnancy	Cognitive Performance, Childhood Behaviour	Very Low Certainty
Parenting/Family Interventions		
Mindfulness/Relaxation; CBT based interventions	Maternal Depressive Symptoms and Stress	High Certainty
Mother-infant interactions, attachment and relationships; and parenting competency using diverse approaches	Infant Neurodevelopment	No Evidence

Interventions during Early (Birth to 6 years) and Middle (6 to 12 years) Childhood

Childhood nutritional deficiencies, obesity, parenting, as well as, home, school and community environment have been strongly associated with cognitive development, child wellbeing and the development of psychopathology in early and middle childhood. As in the previous section, the direct evidence of these interventions influencing terminal outcomes such as the risk of developing substance use related problems is limited, but encouraging.

Nutritional Interventions

The use of micronutrient supplementation for improving cognitive outcomes in early childhood has shown promise. Among them, iron and multi-micronutrient supplementation have been shown to be most effective in improving cognitive abilities, particularly in undernourished children (28). A meta-analysis of iron supplementation in school children (aged between 6 to 12 years) has shown significant improvements in intelligence, attention and concentration and memory, though there was no impact on overall school performance. The improvements were more in children who were anaemic at baseline (29). These findings were also partly replicated in another meta-analysis including studies from only LAMIC countries (30).

Psychosocial Interventions

Psychosocial interventions in early and middle childhood may be universal, selective or indicated. The domain of interventions is usually parents/families and schools.

Parenting/Family Interventions

Universal parenting interventions may have a positive impact on childhood development, and lead to better emotional and behavioural adjustment of children. This in turn may be associated with a decreased likelihood of developing substance use later in life. These interventions in most cases focus on providing feedback either in-person or through recorded videos on parenting practices to improve parent-child interactions.

The Family Check-Up (FCU) is one such well-researched family intervention. It is a brief intervention that is based on motivational interviewing principles and consists of a broad assessment of the family context and parenting practices, an initial “get-to-know-you” meeting with the family, and a formal feedback session. It includes a menu of empirically supported child and family interventions that reduce problem behaviour and promote emotional well-being in children and families. There is also a mechanism for periodic contact (at least once a year) with families (31). The FCU has been used to intervene with families across age groups from early childhood to adolescence (32) and also in diverse ethnic and cultural settings (33). It has been seen to reduce externalizing and internalizing psychopathology in adolescence (34,35) and reduce the likelihood of getting into high risk trajectories of alcohol, tobacco and cannabis use (36,37).

The Attachment and Biobehavioural Catch-up (ABC) is another 10-session home visiting program developed to enhance parental sensitivity. The intervention provides parents practice and feedback in interacting sensitively with their children. It has been used in a number of different settings across the world and also adapted for

specific situations. The ABC has been shown effective in enhancing parental sensitivity, and enhancing children's attachment security and regulatory capabilities (38). It has also been associated with greater high-frequency power (beta, 12-20 Hz) on EEG (39), and increased activation in the amygdala-PFC circuitry in response to faces in fMRI (40).

Tuning in to Toddlers (TOTS) is another universal intervention that aims to improve parent emotion socialization, reduce parent and toddler stress and improve social, emotional, and behavioural functioning in toddlers using a 2 hour/week, six-week program. An RCT found reductions in difficulties in parental emotion regulation, greater increases in parental empathy and competence. There were also significantly greater reductions in systemic cortisol among intervention but not control group children (41).

The Positive Parenting and Sensitive Discipline (VIPP-SD) is another program which used six sessions of video-feedback intervention instead of home visits and was found to have a positive effect on behavioural problems, with particular improvements in conduct symptoms and was also found to be cost effective compared to usual care at 24 months post-intervention (42).

A large meta-analysis which included 102 unique RCTs reported positive benefits of parenting interventions on child cognitive development, language development, motor development, socioemotional development, and attachment and reductions in behaviour problems. Positive benefits were also found on parenting knowledge, parenting practices, and parent-child interactions. There was no clear evidence of effect modification by child age, intervention duration, delivery, setting, or study risk of bias (43). Another meta-analysis which included 22 RCTs and two quasi-RCTs evaluating the effectiveness of group-based parenting programmes found that they reduced overall emotional and behavioural problems, total externalising problems but had no effect on total internalising problems, however the quality of evidence was considered low (44).

In addition to the universal interventions described above, selective or indicated interventions may be required among families at higher risk for substance use. These interventions are typically longer and more intensive, but focus on imparting skills and mentoring with a view to improve quality of interactions and well-being in families.

The Strengthening Families Program (SFP) is an evidence-based prevention program for parents and children between the ages of 3-5, 6-11 and 12-16 in higher risk families. It consists of parenting skills, children's life skills, and family skills training courses taught together in fourteen 2-hours group sessions preceded by a meal that includes informal family practice time and group leader coaching, to promote behaviour change in high-risk families (Table 2). It has been tested extensively and found to lead to significant improvements in youth behavioural health, including reductions in substance misuse, depression/anxiety, and child maltreatment. It has also been adapted to different cultural and socio-economic backgrounds and in a less intensive format as a universal prevention intervention (45).

Table 2: Key Components of the Strengthening Families Program

Domain	Skills
Parenting skills	Review appropriate developmental expectations Interacting positively with children including showing enthusiasm and attention for good behaviour and letting the child take the lead in play activities Positive family communication including active listening and reducing criticism and sarcasm Family meetings to improve order and organization Effective, consistent and effective discipline including reasonable and logical consequences and time-outs
Children's Life Skills	Communication skills (parents, peers, and teachers) Resilience skills Problem solving Peer resistance Feeling identification Dealing with criticism Anger management Coping skills
Family Skills	Practice what is learned in individual sessions using experiential exercises

The Building Healthy Children (BHC) home-visiting preventive intervention was designed to provide concrete support and evidence-based intervention to young mothers and their infants who were at heightened risk for child maltreatment and poor developmental outcomes. Mothers who received BHC evidenced significant reductions in depressive symptoms at mid-intervention, which was associated with improvements in parenting self-efficacy and stress as well as decreased child internalizing and externalizing symptoms at postintervention. The follow-up study found that BHC mothers exhibited less harsh and inconsistent parenting, and marginally less psychological aggression. BHC children also exhibited less externalizing behaviour and self-regulatory difficulties across parent and teacher report (46).

SafeCare is an 18-session behavioural parenting program for child welfare referred caregivers that teaches skills in positive parent-child interactions, home safety, and child health. It has shown preliminary evidence of effectiveness for improving several parenting outcomes including supporting positive child behaviours, proactive parenting, and aspects of parenting stress. However, the impact of these changes on child well-being were not clear (47). There were also improvements in parental support and depressive symptoms (48).

School Based Interventions

The Good Behaviour Game (GBG) is a universal prevention intervention implemented among pre-school and elementary school students based on the principles of group contingency management. The classroom is typically divided into teams and rewards are provided for good behaviour during the course of the game (49). It has empirical support for increase in prosocial behaviour over time (50) and decrease in aggression and disruptive behaviours, although the effects may be smaller than previously estimated (51). It has also seen to lead to reductions in substance use and other risk behaviours during adolescence (52). _

The Michigan Model for Health is another universal prevention intervention for elementary school students that includes 52 lessons in Grades 4 and 5, focussing on nutrition, physical fitness, safety attitudes and skills, social and emotional health, interpersonal communication, social pressure resistance skills, drug use prevention, and conflict resolution skills. It has been associated with improved dietary patterns (53), lower intentions to use alcohol and tobacco, less alcohol and tobacco use initiated, and reduced levels of aggression (54).

Summary And Recommendations:

Nature of Intervention	Outcome	Recommendation
Nutritional Interventions Iron and multi-micronutrient supplementation	Cognitive Performance	High Certainty
Parenting/Family Interventions Improving parenting skills through corrective feedback to improve	Parenting Cognitive Development Externalising and Internalizing Behaviours	Moderate Certainty Moderate Certainty Low Certainty
School Based Interventions Improving children's behavioural control using contingency Management – Good Behaviour Game Improving children's socio-emotional skills through training – Michigan Model of Health	Disruptive Behaviours Substance Use and Risk Behaviours Healthy Lifestyle Disruptive Behaviours Substance Use and Risk Behaviours	Moderate Certainty Low Certainty Low Certainty Low Certainty Low Certainty

Interventions during Adolescence (13 to 19 years)

There are a number of interventions that have been tested out for prevention of substance use amongst adolescents. These include nutritional interventions, exercise-based interventions and psycho-social interventions. Psycho-social interventions incorporate both general aspects of well-being such as building life skills and personality development, as well as more substance specific aspects, such as substance use education and resistance skills. The interventions cover different domains such as individual, peer, school, family and community. In this section, we will review some of the key interventions and the evidence in support of the same. In most cases, studies directly measure outcomes related to substance use.

Nutritional Interventions

There appears to be a co-occurrence of problematic substance use and poor nutritional patterns such as irregular meal patterns, high intake of sugar-sweetened beverages, diet beverages and energy drinks and low intake of vegetables, fruits and fish in adolescents, often related to poor parental supervision and parental conflict (55). Therefore, interventions which address multiple modifiable health behaviours such as under and over-nutrition and substance use in the same program hold promise in improving diet, substance use (56) and mental health outcomes (57).

Exercise Based Interventions

There is clear literature to support the relationship between physical activity and well-being. Further, there is also emerging evidence from cross-sectional studies to suggest that engagement in physical activity (58) as well as sports participation, specifically non-competitive sport may help to prevent the development of SUD (59). This was also supported by a longitudinal study which found that walking for exercise lowered the odds of current and prospective daily cannabis and cigarette use by 20-40%, while strength training, team sports, and individual sport participation were associated with 20-30% reduced risks of future daily cigarette use (60). However, the impact of structured exercise programs on mental health and substance use among adolescents and young adults is limited. Promoting participation and engagement in such programs, determining the intensity of such programs and integrating such programs into existing systems in schools and colleges are important considerations that need further evaluation (61).

Psychosocial Interventions

<u>School-Based Interventions</u>

In the area of universal interventions, life skills training (Table 3) developed by Botvin has been most extensively studied. It consists of 30 classes, taught in sequence over three years with each session lasting between 45 and 50 minutes. It can be taught on an intensive schedule (2 to 3 sessions/week) or an extended schedule (1 session/week). It has been tested in numerous RCTs and found to effective in preventing the use/misuse of alcohol, tobacco and illicit drugs. It has also been implemented across different ages from elementary to high school, and varied economic and cultural settings (62).

Table 3: Key Components of Life Skills Training

Domain	Skills
Personal self-management skills	Enhance self-esteem Develop problem-solving abilities Reduce stress and anxiety Manage anger
General Social Skills	Overcoming shyness Communicating clearly Building relationships Avoiding violence
Drug Resistance Skills	Develop skills to resist pressures to use tobacco, alcohol, and other drugs

The Ad-Venture trial, a selective personality-targeted prevention program delivered over 8 sessions by trained school staff and incorporating elements of motivation enhancement and cognitive behavioural therapy was another program that was found to be effective in reducing harmful alcohol use over 24 months (63). The Co-Venture trial, a follow-up program, which was tested in a sample of 31 schools, where high-risk youth (N=3826) were identified and were randomised to the intervention or control groups also found delayed onset of substance use in the intervention group (64)

In the area of specific interventions, the Drug Abuse Resistance Education (D.A.R.E.) program which was designed to help elementary and junior high school students resist the peer-pressure of experimenting with drugs, tobacco, and alcohol, is the most well-known. Its focus was providing children with information about drug use that encourages them to make healthy decisions. The program was normally taught by a police officer; and the core curriculum has 17 lessons, usually offered once a week for 45 to 60 minutes. Despite its widespread implementation, a large meta-analysis found that it was not effective in the prevention of substance use or attitudes and behaviour towards substance use (65). This led to a change in the name (keepin' it REAL), and the content and delivery, with the focus shifting to imparting fundamental, basic skills needed for healthy development including: self-awareness and management, responsible decision making, understanding others, relationship and communication skills, and handling responsibilities and challenges, using interactive sessions. This has been found to be more effective in prevention of substance use (66) and has also been tested in different populations with positive outcomes (67,68).

Life skills training programs have also been found to be effective when delivered digitally and may be an easy-to-implement alternative to training conducted within a school curriculum. A school-based intervention consisting of online feedback and individually tailored text messages provided over 22 weeks and addressing self-management, social, and substance use resistance skills was tested in 1,473 students from 89 schools in Switzerland and showed long-term effectiveness in preventing tobacco smoking and cannabis use (69).

<u>Individual Interventions</u>

In addition to life skills training programs, there are also a number of other universal SUD prevention interventions in adolescents and young adults which focus on providing feedback about substance use, risk behaviours, health and well-being.

One such intervention, the E-health4Uth intervention, a tailored web-based feedback based on the adolescent's responses to a questionnaire assessing alcohol consumption, smoking, drug use, condom use and mental health showed positive results in terms of improvement of health-related quality of life and mental health status over a period of 4 months, in a cluster RCT conducted among 1256 adolescents from Netherlands (70).

A Personalized Feedback Program (PFP) for college students targeting genetically influenced risk pathways for substance use and providing feedback on four risk domains (Sensation Seeking, Impulsivity, Extraversion, and Neuroticism) along with individualized recommendations and campus resources was found to lead to reductions in alcohol and cannabis use, in a pilot RCT (71).

There is also preliminary evidence for the effectiveness of interventions based on well-being therapy in preventing substance use related problems. A three-arm cluster RCT conducted in Italy to test the efficacy of a well-being intervention compared to lifestyle intervention or no intervention found decreases in at-risk drinking, cannabis use and internet addiction which were most prominent in the WBI intervention group (72).

For adolescents, who are already at high risk for developing problems with substance use, the use of more intensive, selective or indicated interventions has been found to be required.

A longitudinal evaluation of enhanced mentoring for children of incarcerated parents found improvements in positive self-cognitions, reduced internalizing psychopathology, decreased intentions to use substances and substance use among those receiving enhanced mentoring compared to regular mentoring (73).

A systematic review that evaluated interventions for substance use and co-occurring problems among youth with a history of trauma found that interventions with exposure-based components had robust results and minimal adverse outcomes (74).

A large systematic review and meta-analysis found that available evidence is strongest for universal school-based interventions that target multiple- risk behaviours, demonstrating that they may be effective in preventing engagement in tobacco use, alcohol use, illicit drug use, and antisocial behaviour, and in improving physical activity among young people, but not in preventing other risk behaviours. The evidence of benefit for family- or individual-level interventions in reducing substance use and risk behaviours was not strong (75).

Community Interventions

Prevention research over the years has emphasized that working in an isolated fashion with individuals, families or schools is insufficient to make meaningful reductions in adverse mental health outcomes, such as substance use at the population level. This has led to the adoption of community-based prevention models

in many parts of the world, which focus not only on reducing problem behaviours but enhance a sense of well-being and ownership among communities.

One of the most impactful models demonstrating effectiveness in preventing substance use among adolescents is the Icelandic Prevention Model (IPM). This model operates within the community, concentrating on tackling the underlying environmental and social factors that contribute to substance use (Figure 2). These factors include a lack of consequences and supervision within the social environment (stemming from parents and other adults), limited personal and communal commitment to traditional, positive values (including ambitious educational aspirations), and a dearth of opportunities for engagement in constructive and prosocial growth (like organized recreational and extracurricular activities such as sports, music, drama, and after-school clubs).

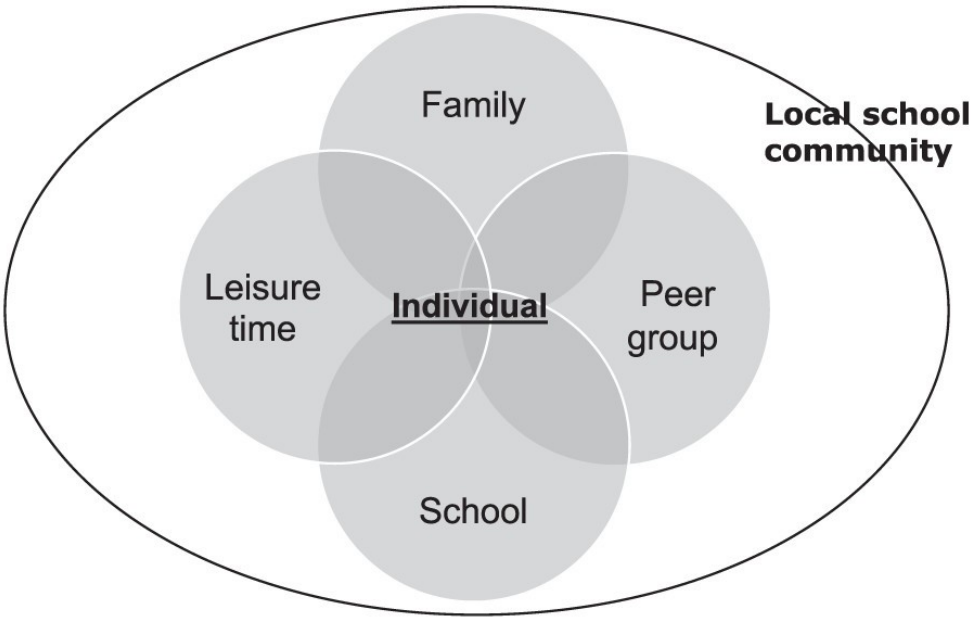

Figure 2: Domains of Community Risk and Protective Factors in the Icelandic Prevention Model

The primary objective of this approach is to rally society collectively against problematic substance use, prioritizing community involvement and cooperation to facilitate enduring, gradual transformations in the environmental and social landscape (76–78). The Five Guiding Principles of the Icelandic Prevention Model are listed in Table 4.

Table 4: Guiding Principles of Icelandic Prevention Model

Guiding Principle 1	Apply a primary prevention approach that is designed to enhance the social environment.
Guiding Principle 2	Emphasize community action and embrace public schools as the natural hub of neighbourhood/area efforts to support child and adolescent health, learning, and life success.
Guiding	Engage and empower community members to make practical decisions

Principle 3	using local, high-quality, accessible data and diagnostics.
Guiding Principle 4	Integrate researchers, policy makers, practitioners, and community members into a unified team dedicated to solving complex, real-world problems.
Guiding Principle 5	Match the scope of the solution to the scope of the problem, including emphasizing long-term intervention and efforts to marshal adequate community resources.

The model has been successfully implemented among rural communities (79,80) and across diverse geographical settings (81), including in lower and middle income countries such as Chile (82).

Promoting School-community-university Partnerships to Enhance Resilience (PROSPER) is a program-delivery system in which universities partner with community teams to implement evidence-based programs for preventing youth substance abuse and other problem behaviours. A 15 year follow up of the original PROSPER RCT suggested there was some indications of better adjustment of PROSPER intervention compared to control participants during the early phase of the pandemic (less increase in alcohol use and less decrease in parenting warmth) and their children (lower levels of externalizing and internalizing problems) but several null results as well (no differences in other substance use behaviours, other parenting measures, or parent depression) (83).

The Street University program from Australia provides a space for young people to socialise away from the street and police attention. Its design has two main components: a comprehensive engagement program aimed to attract and retain young people in the service over the long-term, and a therapeutic program available for those clients who need or want AOD and/or mental health support. It was found to be associated with good retention and improvements in parameters related to substance use, psychological distress and well-being (84).

Summary And Recommendations:

Nature of Intervention	Outcome	Recommendation
Nutritional Interventions Dietary advice along with substance use interventions	Substance Use	Low Certainty
Exercise Based Interventions Structured Exercise Programs	Substance Use	Low Certainty
School Based Interventions Life Skills Training	Externalising and Internalising Psychopathology Substance Use	Moderate Certainty Moderate Certainty
Individual Interventions Personalised Feedback	Substance Use	Low Certainty

Wellbeing Therapy	Substance Use	Low Certainty
Community Interventions Addressing environmental and social factors that contribute to substance use – Icelandic Prevention Model	Substance Use	Moderate Certainty

Interventions during Adulthood:

Interventions in adulthood for prevention of SUD focus on screening, early detection of problematic patterns of substance use and brief interventions for the same and referral to specialist treatment where indicated.

There is extensive support for the use of such an approach for reducing hazardous and harmful use of alcohol in primary care settings (85,86) and emergency settings (87).

There is also promising evidence for the use of personalised digital interventions to reduce hazardous and harmful alcohol use in community settings. These interventions typically involve the person entering information about alcohol use, which is followed by personalised feedback and suggestions about how to cut down on drinking (88).

Interventions during Old Age:

Prevention interventions specifically designed for older people are not common, and those designed for mixed-age groups often fail to address the unique and sometimes complex needs of ageing communities. A systematic review of the empirical evidence from studies (N=19) found that most studies (N=8) utilised different types of screening, brief advice and education. The remaining drew on behavioural, narrative and integrated or multi-disciplinary approaches, which aimed to meet older people's needs holistically (89–91). Interventions need to align with other areas of health and well-being and should be delivered in locations where older people normally seek, or receive help.

Conclusions

- There is a clear relationship between problematic substance use and poor well-being across different age groups.
- The pathways that influence the risk of developing mental health issues such as problematic substance use overlap with those that build resilience and well-being.
- Interventions that reduce risk/increase protective factors can lead to greater well-being and reduced mental morbidity, including problematic substance use.
- Universal interventions, which include multiple components such as nutrition, physical exercise and self-regulation beginning from the antenatal period, infancy and early childhood are likely to have greater effects on well-being and mental morbidity, but direct evidence for the same remains scant.

- Universal school-based interventions seem to have a greater effect on prevention of substance use among children and adolescents when compared to universal individual or family-based interventions.
- The involvement of community in participatory interventions which address the social and environmental determinants of substance use seem to improve well-being of the community and reduce substance use.

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Clinical Practice Guidelines on Environment and Mental Well-being

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Introduction

Our environment, both natural as well as built, plays a crucial role in our health and well-being. Literature suggests that natural and built environments affects (either positively or negatively) the well-being, quality of life (QoL), and psychological health, such as depression, anxiety, stress tolerance, and sleep (Table-1 and Table-2). [1–5] The effect is not limited to the general population, but persons with mental illnesses (PWMIs), such as anxiety, depression, schizophrenia, dementia, and autism, also benefit substantially from the favorable environment.[4,6,7] A good amount of literature has established the positive influence of the natural environment (green space, biodiversity, land mixes, waterscapes) on the well-being and mental health of individuals.[1,8–10] Similarly, the impact of the built environment and neighborhood characteristics (such as urban design, building infrastructure, social spaces, transport system, parks, recreational centres, etc.) on the well-being and psychological aspects of the community dwellers have been systematically researched with positive results. [11–13] Notably, the beneficial effect of the conducive natural and built environment is not only restricted to the community or neighborhood, but extends to health facilities, e.g., nursing homes, residential care facilities, and emergency departments of hospitals.[14–16] Apart from the direct and indirect effects of the environment on the mental well-being of the individuals, several mediating and moderating factors, e.g., age, socio-economic status (SES), severity of the psychiatric conditions, availability of social welfare services, gene-environment interaction, and family/social support, influence the impact of built environment on the health and well-being people.

Various models or frameworks have been posited to explain how our built and natural environment influence our well-being and mental health. One widely researched and utilized model is Bronfenbrenner's bioecological model of human development, which posits that human development is a product of interaction between the growing human organism and its environment. [17] Various urban designs and natural habitat-related models based on this model have studied how different promotive and protective factors and processes (PPFPs) related to the environment promote the resilience and well-being of an individual. [5,10,11]

Various validated measuring tools have been developed to study the impact of the built environment on the psychological health and well-being of the people. Such instruments evaluate housing characteristics (plot size, the rise of the building, etc.), neighborhood features (parks, community centres, green spaces, social spaces, etc.), and their relative distribution on people's health and psychological well-being. However, such instruments are not available in low- and middle-income (LAMI) countries, including India, which limits research on urban health in these nations. Another crucial limitation is the current level of evidence of the built and natural environment and its relationship with health and well-being of individuals; although several systematic reviews, including a few metanalyses, are available on this topic, the research is quite heterogeneous with various methodological flaws (lack of adequate sample size, psychometrically sound measures, long-term effectiveness data, etc.). Furthermore, most research is that of observational, cross-sectional, or (a few) of longitudinal designs, while experimental research is still few. Although governmental and independent agency's guidelines/recommendations are existing on various aspects of urban design, environment conservation, and ideal health facility,[18–21] their positive effect on the well-being and psychological health has not been systematically documented in Indian literature. Moreover, no clinical practice guidelines prevail, particularly those looking at the mental health and well-being aspect of urban design and environment.

Given the scarce literature on this topic and the absence of any practice guidelines from India, our country's progression of environment and mental health is tardy. The current clinical practice guidelines (CPG) attempt to bridge this existing gap in literature from India. In this guideline, we provide various socio-ecological frameworks that explain the mechanism behind the effect of the built and natural environment on the well-being and mental health of the people, various moderating and mediating factors for this association/causation, research on the relationship between environment and different mental health parameters, including mental disorders, special mention of the vulnerable population and urban environment, including their current level of evidence, different instruments used to study this topic, and lastly, provides recommendation as to how built and natural environment can be utilized/modified for the promoting and benefitting the mental health and well-being of the community members. These guidelines can guide policymakers, urban designers, researchers, hospital administrators, and clinicians to incorporate this science into their daily disposition

and ensure that the environment's inherent impact can be tapped and utilized for the benefit of the population and persons with psychological issues.

Table 1: Environment and well-being

Type of Environment	
Natural	• Ecology • Biodiversity (abundance, species richness) • Greenspaces (forest, park) • Waterscapes (river, riparian, ponds) • Landscapes, field • Quality of air • Pollution- noise, light
Built environment	• Urban design (e.g., smart cities) • Building infrastructure • Habitation: communities, slums, urban colonies, streets, overcrowding • Roads and transportation, electricity, sanitation • Hospital building and Nursing home • Office spaces • Schools • Public services (social services, shopping complex, food outlets)

Table 2: Environment affecting various well-being and psychological parameters.

Well-being and Psychological Variables Influenced by Environmental Characteristics	
Well-being	• General well-being • Happiness • Physical health • Psychological well-being • Quality of Life (QoL) • Cognitive function • Resilience
Psychological Health	• Common mental health conditions: depression, anxiety, stress • Severe mental health conditions: schizophrenia • Child & adolescents: autism, Attention deficit hyperkinetic disorder, intellectual disability • Geriatric population: Dementia

	• Others: psychological trauma, distress

Theories or models of the socio-ecological factors affecting well-being/ mental health: Various theories or conceptual frameworks/models have been proposed to explain the mechanism or dynamics of the environment with well-being and mental health (Table 3). They have in common that individual factors interact with the broader national or global trends, local (social), and environmental (natural or built environment) factors to bring about a change (positive or negative) in the well-being and psychological health of the community members. The above factors act by either improving the people's resilience (to mitigate or fight against various internal and external stressors of life) or providing a conducive environment to thrive and grow.

Most of these models stem from Bronfenbrenner's bioecological model of human development, which posits that human development is a product of interaction between the growing human organism and its environment. This environment involves various systems, such as individual systems (biological- immune system, physiological stress responses; and psychological-cognitive processes, coping styles), social systems (family cohesion & support, parental involvement & parenting styles, household income, etc.), built environment (urban design, neighborhood characteristics, community resources, etc.), and natural environment (landscapes, green spaces, waterscapes, and biodiversity), that serve as PPFPs to influence resilience and well-being of an individual. [5]

Few models are primarily geared towards the natural environment/habitat in which an individual lives and experiences various aspects of life. The *socio-ecological model* considers four key factors to determine the (positive) effect of nature on the community members: 1) natural features, such as size, type (green spaces, waterscapes, etc.), quality of the natural environment (quality of the water, air, trees, noise-free areas, soothing sounds, etc.); 2) level of exposure to natural environment, which is determined by the proximity of the natural resources to the community dwellers and time-spent with the nature (walk, viewing, social interaction, recreational activities, etc.); 3) experience/interaction with the nature; e.g., how an individual perceives the available nature around him (its quality, abundance, biodiversity, utility) and interacts with it (self-connection, transcendence); and 4) the effect of the nature on the well-being, including psychological well-being, and health of an individual (reduction in stress, warding off cognitive fatigue, improved self-concept, etc.)**.**[1]

Another model that focuses on the natural environment, particularly concerning waterscapes, is *the psychological and mental health resilience* model by Zhang et al.[10] This model hypothesizes that waterscapes can promote the well-being and mental health of an individual through their mitigating effect (e.g., reducing urban heat island), instorative capacity (e.g., promoting physical activity and state of nature connectedness), and restorative effect (reduction in stress, anxiety, and overcoming attentional fatigue). This model is developed from the following three theories 1) the Attention Restoration Theory: which suggests that restorative environment can alleviate mental fatigue caused by extensive episodes of concentration and focus (known as directed attention). Being away from the attention fatigue causing stimuli and involuntary attention (also known as fascination) towards the natural environment provides an opportunity for reflection; also, extent to which (restorative) environment is enriching and engaging, and compatible with one's intensions or inclinations play mechanistic role in in restoration of mental fatigue.[22] (2) the Psycho-physiological Stress Recovery Theory (PSRT): states following a stressor/series of stressors, exposure to natural environment (vs. urban environment) has restorative influences involving a shift towards more positively toned affective state, favourable changes in the physiological parameters, and is associated with a greater sustained attention. These positive changes are due to greater parasympathetic drive triggered by the exposure to natural environment.[23] and (3) the Biophilia Hypothesis: humans have preferred natural environments and have an inherent emotional connection to other organisms that can have significant positive psycho-physiological reaction in human body.[24,25]

The *psychological and mental health resilience* model proposes that the positive impact of the waterscapes, or natural environment, on the well-being and psychological health of an individual can be ensured by harnessing the benefit of the design principle; the latter incorporates accessibility of natural environment (increase frequency of use), versatility (increase the chance of contact with nature, and habitat (quality, e.g., water quality) and biodiversity.

Another popular model in urban design and health/well-being is the *conceptual model of urban health*.[11] It postulates that the enduring structure of a country, such as its economic system, government functioning, and culture, are continuous factors affecting the health and

well-being of the community members. These macro-level factors interact with major national and international trends (such as immigration, war, economic recession, pandemic, demonetization, etc.), municipal level determinants (Government policies, markets, housing, availability of the quality goods; civil societies structure and functioning, etc.,) and urban characteristics (demographics, SES, built environment, health & social-welfare services) to bring about a change (positive or negative) on the well-being and mental health of individuals.

Table 3: Theories models of the socio-ecological factors affecting mental health or well-being

Theory/models	Key features
Socio-ecological model Bronfenbrenner's bioecological model [26]	Four key aspects of nature and their interaction with an individual determine the impact of nature on well-being or mental health. • Natural features (size, type, quality) • Level of exposure to nature (proximity and time spent with nature) • Experience (interaction with nature, dose) and • Effect (mental health & psychological well-being)
Model of psychological and mental health resilience[1]	The model posits that individuals living in favorable environments have higher psychological health resilience and a shorter response time • Exposure: natural environment • Mechanism of positive mental health: ✓ Mitigation (e.g., reduced urban heat island) ✓ Instorative (e.g., physical activity & state of nature connectedness) ✓ Restorative (reduced anxiety/attentional fatigue) • Design principle (to promote mental well-being): ✓ Accessibility (increase frequency of use) ✓ Versatility (increased chance of contact with nature, e.g., waterscapes) ✓ Habitat (quality, e.g., water quality) and biodiversity
Conceptual model of urban health[11]	The factors that determine health and non-health outcomes are • Enduring structures: economic systems, government, culture • Column 1: Major national and international trends (immigration, suburbanization, changing roles of the governments [demonetization]) • Column 2: Municipal Level determinants; Government, Policies and practices of all levels; Markets: Food,

	housing, other goods; civil societies (community capacity, community movements [unemployment, laws]) • Potential role of public health Intervention and research • Urban characteristics (demographics, SES, built environment, Health & social services)
System model for resilience[5]	Multiple interacting systems determine human resilience • Promotive and protective factors and processes (PPFPs) at different scales gathered as a single multilevel system • Individual level-biological systems (immune system, stress response system & biological vulnerabilities) and psychological systems (cognitive reappraisals, secure attachment, distress tolerance, etc.) • Social levels factors (family cohesion & support, parental involvement & parenting, household income, etc.) • Built environment • Natural environment

Factors moderating and mediating the effect of environment on well-being/ mental health: Research shows that it's not only the environment (natural or built) that affects the well-being and mental health of the people, but several mediating and moderating factors influence (positively or negatively) the impact of the environment on health and wellness of the community dwellers (Table 4). These factors could be personal and/or environmental. For instance, age is a critical variable that affects the neighborhood's mental health benefits, with the green spaces being greater and significant in physically active elderlies than young adults. [1] Similarly, the severity of the mental health conditions also mediates the impact of the environment on the well-being or mental health variables of the people, with green spaces and supportive physical environment (e.g., architectural designs, tailored individual adaptations) having more pronounced (positive) influence on the mental well-being/activities of daily living of mild-moderately depressed and demented individuals, respectively, compared to severely ill individuals.[27,28] Likewise, the positive impact of the relocation of the socially disadvantaged population to a better or resource-rich neighborhood is mediated by the characteristics of the surrounding neighborhood of the relocated neighborhood. The moving to opportunity (MTO) experiment involving low-income families, with a 10-15years follow-up design, shows that if the surrounding environment of the resource-rich relocated neighborhood is conducive and non-discriminatory, it has greater and significant positive mental health benefits vis-a-vis hostile or unfavorable surrounding neighborhood. [29]

Various environmental mediating factors influence the effect of the built environment or nature on the psychological well-being and health of the people. Literature suggests that the perceived biodiversity (vs. actual biodiversity or species richness) of an urban built environment or natural environment has a greater bearing on the perceived positive impact of the environment than actual biodiversity. The psychological effect of nature on the affective state of urban dwellers is also moderated by the type of interaction with nature and the form of sensory inputs (e.g., visual, olfactory, auditory, or tactile). [1]

Likewise, it has been found that gene-environment interactions rather than only environmental factors or genetic factors determine the depressive symptoms in the socially deprived situation, with those genetically vulnerable to depression tend to experience more negative effects of the socially deprived environment than those without genetic risk of depression. Such interaction(s) also predispose an individual to remain in the socially deprived location or not move to a better neighborhood, given an opportunity to do so.[30]

Research involving vulnerable populations (elderlies and girl children and adolescents) has also shown how various mediating factors influence the relationship between the built environment and mental health. For instance, a systematic review by Kleszczewska et al. [26] reported that it's not only the level of physical activity that determines its positive impact on mental health but also the family structure/dynamics and the broad environment, acting as the mediating factors, that determine such association. McCormack et al,[13] in their comprehensive review, have reported that elderly-friendly social welfare services mediate the positive effect of the green spaces (conducive built environment) on the mental health and well-being of the geriatric population.

Therefore, researchers and urban planners/policymakers must consider these personal and environmental factors while designing the built environment or regeneration programs to promote the well-being of the community members.

Table 4: Moderating/mediating factors influencing environment and mental health & well-being

Moderating and mediating factors	Mental health conditions/well-being
Personal factors:	
✓ **Age of the individual**	• Mental health benefits of neighborhood green space are stronger among physically active adults in middle-to-older

	age (vs. younger adults)
✓ **Social disadvantages**	• Socially deprived populations positively get influenced by neighborhood green spaces & conductive neighborhoods around the relocated better place Vs. affluent population
✓ **Severity of mental health conditions (depression, dementia)**[27,28]	• Green spaces have a more positive influence on the mental status of mild-moderately depressed individuals (vs. severely depressed) • Supportive physical environment (architectural designs, tailored individual adaptations) has a positive influence on ADL among individuals with mild-moderate dementia (vs. severe dementia)
Environmental factors:	
✓ **Quality of neighborhood**[2,13]	• Impacts psychological well-being by affecting resilience
✓ **Family & broad environment**	• Mediate impact of physical activities on mental well-being
✓ **Perceived biodiversity**	• Mediate actual biodiversity's impact on human health
✓ **Gene-environment interaction**	• Variance in depressive symptoms is related to additive genetic increases as a function of social deprivation
Availability of social services	• Mediates the impact of built environment & green space on mental health & well-being

Characteristics of urban design and built environment and that effect on well-being and mental health

Green spaces: Urban green space is linked to people's psychological well-being and positive mental health. Literature suggests that individuals exposed to green spaces have improved affective, cognitive, and physiological health compared to those not exposed to these environments. [1] Furthermore, the positive effect of green exposure is more pronounced in the urban poor (or socially advantaged population) vs. the urban rich. [1] The impact of green spaces on the psychological health of people is both direct (visual stimulation, stress-reduction, and restorativeness) and indirect (promoting physical activity, social cohesion, and recreation).[3,8] Moreover, exposure to green spaces and biodiversity reduces the risk factors, such as stress and sleep deprivation, of mental disorders. It must be highlighted that it's not only the quantity of the exposure, but the quality, interaction, and perceived restorativeness potential of nature also play roles in (improving) the well-being and mental health of the

community dwellers. [1] However, research reveals that this causal relationship between green spaces and mental health is short-lasting, while long-term effectiveness data is lacking. Nature also has a salutogenic role (i.e., fostering psychological well-being through evidence-based urban planning or design before the former becomes a necessity to treat diseases) in urban health. These findings underscore the need to account for the mental health aspect of the environment while making urban plans and considering the mental health aspect of the environment as a crucial public health issue. Integrating this knowledge is particularly vital when planning urban redevelopment in socially disadvantaged areas.[3] It must be highlighted that the current body of evidence is mainly observational, cross-sectional, or longitudinal, while randomized controlled study is largely lacking.

Waterscapes: Waterscapes or blue spaces (e.g., marine spaces, riparian, water biodiversity) have significant benefits on the well-being and mental health of the people.[1,10] Notably, the positive impact of the waterscapes is greater than that of green spaces. Former improves mental health by warding off the negative emotional states through reducing the urban heat (mitigating effect), providing opportunities for physical activities, interaction with people, and a sense of connectedness with nature (instoration), and reducing anxiety and attentional fatigue posed by daily demands of city life or fast paces lives.

In the seminal work by Zhang et al.[10] on the role of waterscapes in promoting psychological health in the population, the authors report that waterscapes have healing effects by increasing the psychological resilience of an individual. Furthermore, blue spaces have an inherent positive impact on the people's psyche, including the people's natural connection with the aquatic life-biophilia hypothesis. Accordingly, to maximize the impact (positive influence) of the bluescapes on the health and well-being of the community dwellers, the urban designer or environmentalist should push for greater waterscape accessibility (e.g., reducing the high-fence walls, creating water-friendly platforms, creating alleyways), increasing interactivity (providing spaces for people to relax, including viewing animals), and restoring water quality (bioremediation and physical remediation). However, more research is required to investigate the mechanistic role of waterscapes in bringing about positive mental health. Also, how various characteristics of waterscapes, such as its freshness, luminescence, rippling or fluidity, cultural value, and dose-response relationship, if any, determine its impact on health and well-being.

Built environment and urban environment: A large body of literature provides evidence for the relationship of the built or urban environment with the psychological well-being of the population.[3,4,11–13,31,32]

The built environment can directly or indirectly affect individuals' well-being and mental health parameters. The direct effect includes the influence of pollutants (air, water, and noise), toxins (lead, solvents), and contaminants (food quality) on the behavior, e.g., aggression, and self-regulatory behavior, of an individual. In contrast, the indirect effect pertains to the effect of the built environment on the psychosocial processes, level of control over the environment, social relationships, perceived safety, and restorative capacity (Table 6). Researchers have posited three theories on how urbanicity can influence the mental health of people: 1) *urban penalty model*, which states that people living in the urban environment are at a high risk of various health problems due to inherent ill effects of the city life on the individuals, 2) *urban sprawl phenomenon*, emphasizes that spread of the urban culture or environmental changes in suburbs negatively affect the mental health of the suburban or rural population, and 3) *urban benefit*, which incorporates the positive impact of urban life on the mental health of the community dwellers due to greater opportunity and availability of services.[11]

A systematic review by Evans[31] reports that high-rise building, poor-quality housing, and overcrowding is inimical to the psychological well-being of the residents of the urban region. Built environment through its physical infrastructure also impacts the community dwellers' social interactions and social capital. Some of the critical built environments that affect people's mental health and well-being are proximity to roadways, aesthetic quality, walkability, urbanicity, access to services, land-use mix, population density, electricity and water quality, and level of crowding. Moreover, subjective experiences of the community members regarding the level of social support, safety, controllability over the neighborhood, and stress process also have a bearing on the psychological health of people. As highlighted previously, perceived social services and tangible support from the government and authorities also influence the psychological health of the community dwellers.

Only a few controlled studies, including from India, have looked into the effect of the built environment-based intervention, for instance, the slum-network program, an integrated housing infrastructure redevelopment program along with the provisions of transport, quality water, and electricity, and sanitation, reports the positive effect of such interventions on the

QoL of the slum dwellers. However, the positive impact could be sustained only up to three months, with a six-month evaluation revealing a non-significant difference between groups.[33]

Similarly, a study from Hyderabad by Saraswat et al.[34] found that socio-economic vulnerabilities (poor housing condition, lack of access/availabilities of routine facilities, and neighborhood characteristics) is related to self-efficacy and mental health outcomes (anxiety, stress, etc.), with those having higher socio-economic vulnerabilities (vs. those having lesser socio-economic vulnerabilities) perceive less control over the situation and lack of available resources during natural disaster, such as flood.[34]

Another pivotal multicentric study from India, funded by Indian Council of Medical Research on urban mental health service systems, observed that despite the substantial burden of mental health problems in metropolitan regions, the distribution of mental health services is inequitable in participatory metropolitical cities (Delhi and Chennai) and another major city (Lucknow) of the country. Moreover, the structure and function of district mental health programs in urban areas must be tailored to the needs of people of the urban locality than simply trying to replicate the service structure and model of the primary health centres located in the rural region. The study further found that lack of transport facilities, including last-mile connectivity, and financial constraints in reaching the mental health facilities to be crucial barriers to accessing mental health services in urban areas.[35]

Concerning a quantitative analysis, a metanalysis reported that composite SES of the neighborhood is negatively associated with the depression and pooled mental health of the participants. Furthermore, neighborhood urbanicity is positively associated with the above psychological parameters. Strikingly, a null association was found between the natural environment and the mental health of the participants. However, the authors emphasized that the current level of evidence was limited by the lack of robust methodologies across the studies, i.e., lack of longitudinal and comparative studies, non-availability of validated measuring instruments, and scarce literature from the low- and middle-income countries.

It must be highlighted that more research is required on this topic, particularly those evaluating the influence of the built environment through a randomized controlled design and long-term longitudinal design and elucidating the mechanism behind these benefits.

Noise and mental health issues in urban regions: noise denotes audible acoustic phenomenon (unwanted sounds or set of sounds) that adversely affect people either by directly causing health hazards (aggression, anxiety, cardo-vascular problems) or increasing the risk

factors for health issues (sleep disturbances, annoyance, stress, poor cognitive function, etc.). [36] In urban settings, road transport, railways, aircraft, industries, and construction works are common sources of noise pollution, which can lead to several mental health issues. Noise can lead to sleep disturbances: increased sleep latency, fragmented sleep, early awakening, and the inability to fall asleep again. Such sleep disturbances can cause several mental health problems and cognitive dysfunctions among people. The problem is more marked in shift workers, where noise can significantly affect the well-being and QoL of workers.[37] Research shows that annoyance due to aircraft noise and noise sensitivity are associated with psychological ill health, with annoyance falling on a gradient, mediating psychological issues of the population (not at all annoyance has odds ratio [OR] for poor psychological health 1.7 (1, 3.0) while extreme annoyance has an OR 4.0 (1.6, 9.5).

Furthermore, noise can result in increased levels of stress hormones and higher sympathetic tone manifested as increased heart rate and blood pressure. Therefore, providing an adequate environment with a noise-free zone or optimum sound is vital for maintaining good physical and psychological health.[38] Increased exposure to noise has also been linked to psychiatric hospitalization and increased purchase of hypnotics. It cannot be overemphasized that mental health facilities, particularly those catering to children with autism and dementia, have an optimum sound level and infrastructure that mitigate excess noise. [36]

-Hospital-related parameter: Research shows that hospital-built environment and characteristics of the residential facilities for patients (whether with physical or mental illness) significantly affect the well-being and psychological health of the patients, their caregivers, and also the healthcare providers (Table 6). Evidence shows that the safety and security, competency, and personalization and choice (SCP) model of a mental health institution's architecture can facilitate or impede mental health conditions and psychological well-being. A more facilitatory model/design (safe & secure environment [vs. unsafe and insecure], design that promotes residents' competence [vs. dependency], and personalized care or choices [vs. absence of such care system]) would promote greater agency, reduced stigma, social interaction, and integration. In contrast, a restrictive or surveillance-led design would adversely affect their well-being, particularly in rehabilitation institutions.[14]

Similarly, the quality of emergency services for trauma victims (physical, psychological, or both) can significantly influence the well-being and psychological health of the patients,

caregivers, and health professionals. Trauma can be due to past experiences (historical trauma), medical trauma (due to medical or surgical procedures), or re-traumatization (due to traumatic experiences at the emergency department or hospital premises). As mentioned above, not only patients/caregivers can experience such traumas during the clinical encounter, but also the hospital staff or service providers. Therefore, the researchers have proposed trauma-informed care (TIC), an organizational structure and treatment framework that involves understanding, recognizing, and responding to the effects of all types of traumas.[15] It involves patients' and care providers' physical, psychological, and emotional safety. The critical aspects of such a care framework are routine and universal screening for traumatic experiences of all the stakeholders, trustworthiness, peer support (collaborative care and providing a menu of options), and dealing with cultural, historical, and gender issues of the patients. TIC also entails properly initiating patient encounters, implementing key characteristics of TIC in patients' interviews, and closing the interview with the patients, including admitting them promptly or their disposition. Specifically, for psychiatric patients, emergency department visitors (ED) with psychological issues mustn't be discriminated against; they should not face a long waiting period and be promptly seen/referred to a psychiatrist. Lastly, an Emergency Psychiatric Assessment, Treatment, and Healing unit should be established to ensure visitors' privacy, prevent overcrowding, and provide a soothing and safe environment.[39]

For health professionals, including mental health professionals, it's crucial that patients visiting health facilities or visitors of ED with a history of trauma, physical or psychological, be prevented from re-traumatization (vicarious trauma) through trauma-informed care.

- Psychiatry in-patient setting and mental hospitals:

The built environment and interpersonal dynamics in psychiatry in-patient are critical as usually patients have a longer hospitalization during, greater radius of movements in the facility (vs. physically ill patients), the recovery is aimed at improving everyday functioning with the facility and outside, and patients' due to their psychopathologies (perceptual disturbances, altered mood state, thought problems, cognitive dysfunctions, etc.) are vulnerable to environmental influences. Multiple-place theories, which posits that different sub-places in a hospital/setting (patient's room, hospital's external spaces, the overall hospital

care unit, wards' external space, etc.) have bearing on the well-being of the patients, and prosocial hospital environment can have facilitatory role on the recovery and well-being of in-patient service users.[40] A systematic review involving 52 records (including 26 original studies), suggests that hospital environment, built and human-interactions, influences mental health (e.g., anxiety, aggression, confusion), well-being (sense of safety, agency, comfort, etc.), and recovery of the patients (reduced hospital stay, healing effect, etc.) admitted in psychiatry in-patient facility through environmental stimulation (lights, noise, sensory cues), sense of environmental control (privacy or socialization, access to facilities, including staff, seclusions, etc.), and symbolism/associations (locked doors, glass rooms, covered nursing station, dull and overcontrolling environment, etc.).[41] (Table 5) Researchers have also suggested some of the best practices in the psychiatry in-patient facilities in terms of ambient features, architecture, interior design, furnishings, familiarity, social features, etc., that can have therapeutic and rehabilitative roles in mental health and wellbeing of patients (detailed in Table 5).[42] Few key characteristics have been described below and highlighted in Table 5.

For instance, research shows that mental health facilities if located in a secluded place, far off from the routine hospital facilities, with poor transport connections, and highly restrictive settings (overcrowding, lack of ventilation, poor quality washrooms, lack of visitor facilities or social contact), can negatively influence the well-being and psychological health of the residents.[14]

A comprehensive review and research work by Ussher[43] in the University of Durban, South Africa, reports that building or architecture can affect healing, stress level, and general well-being of patients, including residents; moreover, a well-planned hospital building can prevent the ill effect of the building otherwise would have (if not appropriately planned).[43,44] Researchers emphasize that the spatial configuration of the hospital building, its location, its domestic-like environment, and neighborhood characteristics, contact with the outside world, integration with the community, and participatory for the caregivers/friends of patients have a positive influence on the well-being of the patients' availing services in such facilities. Moreover, building design can also affect the mental health stigma, with a secluded or restrictive building and intimidating treatment style can worsen the mental health stigma among the community members. In contrast, a mental health facility integrated with general health care and located closer to community facilities and residential areas will reduce the mental health stigma. Furthermore, a hospital environment that is welcoming and positive,

respects patients' rights (dignity, privacy, respect, dignity), has legible wayfinding and available services, is in touch with nature (water spaces, greenery, biodiversity, etc.), and has transition spaces, with a blend of personal and public space that cater to the needs of the patients facilitate recovery, positive in-patient experience, and early integration in society post-discharge.[14,43]

Table 5. In-patient psychiatry facility characteristics and their impact on mental health outcomes

Various domains of in-patient built environment	Preferred Characteristics and evidence
Ambient features	• Soft, indirect, and pervasive or full-spectrum lighting • Ample natural daylight • Good air-quality: air quality with fresh air, good ventilation, and neutral odours • Highly reverberating places to be avoided **Evidence:** • Depressed patients exposed to sunlight have reduced hospital stay; morning lights compared to evening light have therapeutic for Bipolar depressed patients.[45] • Adequate sensory stimulation is related to greater perceived reduction in psychiatric symptoms and aggressive behaviour.[46] • Poor thermal comfort, unpleasant aesthetics, & unhygienic conditions are associated with increased absconding, aggression & discomfort.[47] • Abstract art can promote anxiety, glass rooms can lead to overstimulation, and absence of stimulation can give rise to feeling of institutionalization & confusion).00/00/0000 00:00:00
Architectural features	• Adequately sized and number of windows promoting access to external environment is favourable • Outdoor gardens & access to nature • Seclusion rooms near and within sight of nursing stations but outside of main patient corridors and activity areas • Availability of Staff lounge • Space to accommodate new technology in view of rapidly evolving built-design and technology • Group meeting space • Family meeting space off-ward has better patients'

	satisfaction and outcome • Having a communal space where males and females can communicate and socialize promotes clients' satisfaction **Evidence** • Family meeting space off-ward is associated with greater clients' satisfaction & better outcome.[40]
Interior design features	• Should account the unit's symbolic meaning. • Demarcated reception area and welcoming gestures towards patients and visitors are beneficial • Less-restrictive environment and low-perceived sense of power difference between patients and staff **Evidence:** • Favourable symbolism/associations are associated with lesser absconding, seclusion, emotional distress, self-harm & aggressive behaviour.[41]
Furnishings	• Homely décor' **Evidence:** • Natural wood veneer on doors, hallway rails, and nursing stations can soften the look of the facility. Upholstered chair & adjustable furniture have positive psychological impact on the patients.[42]
Familiarity	• Familiar tone of the patients' room • Artwork (soothing, but not exciting) • Images of nature can reduce anxiety
Color	• Muted colours are preferred **Evidence** • Brighter colors can alleviate depression but can promote agitation in delirious patients; warm blue colors can be soothing and sedative effect. [41] • Use of colours in units must be in consultation with the hospital authorities and treating team. [42]
Other interior design considerations	• Accommodating patients with competing needs, e.g., manic, or overstimulated patients Vs. depressed or withdrawn patients. • Natural plants in the unit have positive effect • To promote safety, tamper-proof electrical outlets, shatter-proof windows, breakaway curtain rods, stainless-steel mirrors, & lockable water taps are advised. **Evidence:** • Locked ward doors and spatial confinement/seclusion

	rooms are associated with emotional distress, shame, fear, vulnerability, worsening of psychiatric symptoms and self-harm and negatively impacts recovery.[48,49] • Natural art & stress-reducing attributes, e.g., natural art, garden, access to garden have therapeutic role through their calming effect.[50] • Being unclear to various hospital processes and lack of information about it reasoning (e.g., privacy, restrictions, spatial configuration) can result in emotional distress, anxiety, & confusion.[51,52]
Social features	• Provision of social spaces, • Small-group circular arrangement of • furniture promotes socialization. • Area prone to overcrowding should be avoided • Space for privacy and communal spaces should be provisioned and balanced appropriately. **Evidence:** • Lack of privacy, such as crowding, mixed-gender rooms, excessive environmental stimulation, and absence of alternate space to roam around in the ward are a/w greater distress among the female victims of trauma.[41,53]
Special issues	• Open nursing station has positive psychological, behavioral, & social effects. **For older people:** • brighter lights, high level of illumination • familiar images, familiar dining experience, Opportunities for exercise or other physical activity, • shorter corridors, sufficient visual cues, • Suicide-proof (enclosed bottom) handrails and grab bars throughout the facility • Chairs (and commodes) should have sufficient height and arm length. • bathrooms be large enough to accommodate wheelchairs and care attendants. • increasing the visibility of toilets can reduce incontinence. **Evidence:** • Psychological distance between staff & patient results in greater psychological distress & aggression in patients; in contrast, greater accessibility & communication between them are related to lesser disruption to staff's

	work by patients & less fear among the patients.[47,54]

a/w: associated with

-Special population: The built and natural environment have a bearing on the mental health and well-being of the vulnerable population. There is a significant body of research involving geriatric population and children and adolescent populations that has proven that built environment characteristics and natural environment, through their various critical characteristics and interplay, influence the health of these populations, including those suffering from mental illnesses, such as autism and dementia (Table 6).

For instance, research points out that age-friendly smart cities involving internet or digital-driven and supported cities with residential welfare services, ecologically friendly mobility, low-carbon-di-oxide emission levels and public safety nets and access to services significantly improve well-being and mental health of the general population, more so, geriatric people. However, inequitable distribution of such advanced, technologically laden services, for instance, when it is restricted to certain geographical locations or neighborhoods, may result in perceived discrimination and poor mental health parameters.[32]
In a scoping review the authors reported that mobility and social participation of geriatric persons are related to proximity to the resources and recreational facilities, which in turn improves their well-being and QoL. In contrast, poor user friendly walking environments and neighborhood insecurities are related to adverse mental health outcomes among elderlies.[55]

Environment, and neighborhood and institutional facilities also have a bearing on the mental health of persons suffering from dementia. A systematic review involving 64 empirical studies and nine reviews, found that unit size, spatial layouts, level of sensory stimulation, environmental characteristics (outdoor, dining area, home-décor, social spaces), the behavior of the staff and service providers, of the institutional facility significantly influence the aggression, orientation, and stress among the residents of dementia care facilities. Specifically, small unit size, L/H shaped layouts, smooth room colors, homely flooring and furniture, spaces for socialization, privacy in the washroom, the small size of the dining area, the garden outside, and support from the residential staff has a positive impact on the mental health of the persons with dementia.[6] Another review involving 72 studies, found that global

environment, architecture features, moveable environmental aides, and tailored individual approach with provision, referred to as the holistic environmental change, can positively influence the mental health of the elderly with dementia.[16] The mechanism behind such positive effects can be conceived as such comprehensive perceived environment changes act as stimulation and reminiscence therapy for individuals suffering from dementia.[56]

Similar to elderlies, the built environment and neighborhood characteristics influence the well-being of children and adolescents. A study by involving seven reviews with adolescent girls and young adults as samples, highlighted that the positive impact of physical activity on mental and physical health, including self-concept, self-image, social relationships, quality of life, are mediated by the neighborhood characteristics (availability of community sporting services, social support), linkage of school with community recreational facilities, and family support. With a supportive family structure, greater opportunities for physical activities and community recreational facilities have more positive mental health benefits.[57] Another study from Dehradun's slum involving young girls found that gender inequality, limited access to education, chauvinistic society, overcrowding, and social deprivation can result in higher anxiety, depression, gender equality attitude, poor coping, and resilience among them. However, interventions (Nai Disha or new pathways) aimed at improving their self-image, communication skills, mental health, communication skills, relationship skills, self-care and participation as change agents in the community resulted in substantial improvement in scores in all five areas, and some of the improvement persisted for as long as 8 months.[58]

Literature on children and adolescents with autism has shown that the built environment of child-care institutions substantially influences the mental health of children. A review of 21 quasi-experimental and intervention studies found that characteristics of child-care facilities influence the mental health of autistic children, wherein conducive sensory stimulation (low arousal environment, favorable acoustic stimuli, the optimal smell in the vicinity, small spaces, demarcated transition zone, clear spatial layouts), intelligibility (visual relationship between environments, predictable environments & routine, an appropriate proportion of spaces), and orientation (visual support through images, layouts; wayfinding through maps/color codes) have a positive influence on the affect and behavior of such children.[7]

Likewise, research on children and adolescents with Attention Deficit/hyperactivity disorders (ADHD) has shown that green outdoor activities as compared to other activities (e.g., indoor activities) during the afterschools and weekends results in significant improvement in ADHD symptoms.[59] This improvement can be explained by the attention-restorative theory of Kaplan as highlighted above.

Therefore, such built-environmental characteristics should be taken into account while designing urban environments as well as care facilities for the vulnerable population, which may facilitate their treatment and rehabilitation.

Another vulnerable population is pregnancy lady & young mothers, research shows that increase exposure to particulate matter ≤ 2.5 μm in diameter (PM2.5) during pregnancy is significantly associated with an increased odds of Post-Partum Depression at six months and also for the late-onset PPD.[60] Similarly, pregnant women without past history of psychiatric illness, upon exposure to noise, specifically night-time noise, have a higher odds of hospitalization for depression and other psychiatric conditions later in their lives.[61] A retrospective observational study from New York involving health electronic records of 9000 pregnant women noticed that mixed land use, lower walkability, more retail access (proxy for connectedness of the neighborhood in providing community support to women), and lower $PM_{2.5}$ concentration (pointing towards semi-urban or less-affluent areas) have greater risk of post-partum depression.[62]

-Rural Vs. Urban differences in mental health conditions

Extant literature, including from India, shows that the prevalence and manifestation of mental disorders vary between rural and urban settings, with schizophrenia and depression being commoner in Urban areas compared to rural settings; in contrast, alcohol use disorders are more prevalent in rural settings. [63–66] The common theory/hypothesis behind this difference is reduced social support in an urban environment, unfavorable neighborhood conditions (overcrowding, discrimination, poor access to social support or welfare services, including health and education), higher stress levels, and selective migration. The selective migration refers to persons vulnerable to developing mental health conditions who tend to move to urban locations; moreover, upon developing psychiatric illnesses, they don't relocate to rural areas (vs. those without mental health conditions).[65,66] It must, however, be highlighted that

these days, the qualification of the rural versus urban setting forms a continuum rather than just a dichotomy.

Table 6. Characteristics of various urban design and built environment that has a positive impact on well-being and mental health

Natural	
Ecology	• Quality of green and blue spaces (aquatic & marine environment, biodiversity (abundance), nature's size, composition, spatial configuration, interaction with nature & human dwelling, lack of noise, quality of air, light, etc.
Greenspace	• Quality of green space, street trees, density of trees, spatial configuration of green space, tree canopy density, vegetation structure
Waterscape	• Quality of water spaces (river, lakes, riparian); access to waterscapes, space around it for walks, recreation, & sports; Diversity of aquatic creatures, flora and fauna
Landscape	• Psychological-friendly landscape (for elderlies, etc.); quality of land, spatial configuration of landscapes, Land usage (arrangement of destinations, mix of uses, distribution of parks and recreational opportunities); land use mix with parks, water spaces
Miscellaneous	• Quality of air, light, soothing sound, noise-free environment, etc.
Built environment	
Urban design/ Built environment	• Low-rise buildings, renewable and sustainable energy, proximity to roadways, transport system, park, walkability, proper ventilation, recreational opportunities, safety
Neighborhood (community, street, crowd, household)	• Residential welfare services, (lack of) overcrowding, housing conditions, rainwater drainage, electricity social capital, sanitation, culture
Hospital/nursing home architecture & infrastructure	• Dementia/elderly population: unit size, spatial layout (L-, H- or square-shaped units), homelike character, sensory stimulation, and environmental characteristics (familiarity, engaging environments, range of private/communal spaces; temperature, noise, lighting); staff behavior; smaller-sized dining rooms, outdoor area (park, walking area, group activities, etc.); washroom (privacy, end/side entry bathtub). • Children with special needs, e.g., autism: sensory quality (low arousal environment, minimal background noise, soundproof rooms, good ventilation/avoid the intense smell, transition areas between spaces/activities; clear and simple spatial layout). Intelligibility (visual relationship between environments, predictable environments & routine, appropriate proportion of spaces). Orientation (visual support through images, layouts; way findings through

	maps/color codes) • A welcoming, inspiring, supportive, favorably located hospital, with conducive spatial configuration, contact with nature, and respectful towards patient rights, and close to the community positively impacts the mental health and general well-being of patients.
School	• Proper light, sitting spaces, washroom, playground, sports period, team activities, physical activities, integrating physical activities at school with the community recreational activities
Public services	• Social welfare services (particularly for the vulnerable population, e.g., elderlies), health & cultural services, transportation, food outlets, shopping complex nearby, quality of food products,
Hospital and emergency services	• Trauma-informed care in the emergency department • Routine & universal screening for all traumatic experiences (not only for the patients but also health workers), peer support, safety, trustworthiness and transparency, peer support (allowing for an environment of supportive engagement), collaboration and mutuality, empowerment of voice and choice, cultural, historical, and gender issues; avoiding long-waiting time in registration and psychiatry consultation; separate Emergency Psychiatric Assessment, Treatment and Healing units; proper starting the encounter, patient interview and closing the visit (including referral to routine out-patient services)

Assessment Tools for studying the relationship of built environment/nature and health parameters

Studying the relationship between the built environment/nature and health parameters is highly dependent on the availability of psychometrically sound instruments for measuring the built environment and nature; in the absence of the latter, the accurate measurement of the built environment or nature is not possible which, in turn, can impede the research in this topic. Notably, there is a lack of such instruments in India. Hence, we either have to adapt currently available instruments, primarily contextually limited to Western standards or use geographic information systems or other proxy markers.

Traditionally, two approaches have been used to measure the built environment in the research on the relationship between the environment, built or natural, and mental health or psychological well-being: independent observational measures and Geographic Information System (GIS) (**Table 7**).[67] While GIS has the advantage of providing a birds-eye view of the current extent and level of the built environment or natural areas (type, spatial distribution,

quantity, geographical distribution, and relationship with neighborhood areas, etc.) of a wider region, it might not provide a sufficient granular picture of the built environment/natural area. Moreover, not only countries or communities have such resources; therefore, research in these regions may also be impeded if they solely rely on the availability of robust GIS.

Researchers have developed various independent observational measures to study the relationship of the environment with the mental health parameters and health of the population, including vulnerable groups, such as children and, adolescents, and the elderly.

The most extensively used tool is the *Residential Environment Assessment Tool (REAT 2.0),* which has been widely utilized in housing regeneration programme in the United Kingdom (UK). It has street level and property variables around (1) neighborhood condition (e.g., litter in public space, property maintenance), (2) natural surveillance (e.g., clear views of the street, clear views of windows & doors), and (3) natural elements (greenery in public spaces, purposively planted vegetation in front gardens). *REAT 2.0* has the highest inter-rater reliability among the various available tools.[68]

Another commonly used tool is the Built Environment Site Survey Checklist (BESSC). This has been used widely in the housing redevelopment or regeneration program in urban settings. BESSC measures the physical characteristics of housing and comprises 27 items covering four major areas of housing: (1) characteristics of buildings, (2) space around buildings, (3) facilities and accessibility, (4) safety and security. It has good interrater reliability (k=0:50).[69] University of Miami Built Environment Coding System (UMBECS) developed as a built environment coding system to measure streetscape blocks, has been widely used in the United States and North America. It has been utilized in research on children & adolescents' neighborhood and mental well-being. It measures the physical characteristics of neighborhood under the following four domains: (1) built lots in the interior of a block, (2) built lots at the corners or intersection of two streets, (3) vacant lots, and (4) parks.[70]

Lastly, Systematic Social Observation (SSO) is a standardized approach to directly observing neighborhoods' physical, social, and economic characteristics, one block at a time. It was developed to assess built environment characteristics upon young people's development. Data

is typically collected through both videotape and observer logs. The domains covered are Physical Disorder (graffiti), Social Disorder (fight/hostility in the neighborhood), Physical Decay (condition of the building), Commercial building security (properties with pull-down metal gates), Alcohol/Tobacco Advertising, Bars/Liquor Stores. It has been widely used in urban health research.[71]

Table 7: Measures used to assess the urban or built environment

Measure	Characteristics
Geographic Information System (GIS) [67]	• Commonly used method to measure built environment and natural areas (greenspaces, waterscapes, etc.)
Built Environment Site Survey Checklist (BESSC) [69]	• Developed jointly by Royal Free & University College Medical School, the Institute of Psychiatry, & the National Centre for Social Research, in collaboration with the Oxford Centre for Sustainable Development at Oxford Brookes University. • Measure physical characteristics of housing. • 27 items covering four major areas or housing: ✓ Characteristics of buildings ✓ Space around buildings ✓ Facilities and accessibility ✓ Safety and security • Good interrater reliability (*k*=0:50)
Residential Environment Assessment Tool (REAT 2.0), UK [68]	• Redeveloped by National Institute for Health Research, Wales • Utilized extensively in housing regeneration programme • Have street level and property variables around (1) neighborhood condition (e.g., litter in public space, property maintenance), (2) natural surveillance (e.g., clear views of the street, clear views of windows & doors), and (3) natural elements (greenery in public spaces, purposively planted vegetation in front gardens). • Has highest inter-rater reliability
University of Miami Built Environment Coding System (UMBECS) [70]	• It has been jointly developed by Royal Free and University College Medical School, the Institute of Psychiatry, and the National Centre for Social

	Research, in collaboration with the Oxford Centre for Sustainable Development at Oxford Brookes University. Developed as a built environment coding system to measure streetscape block. Physical characteristics of ✓ Built lots in the interior of a block ✓ Built lots at the corners or intersection of two streets ✓ Vacant lots and parks • Seven categories of features which can be coded at neighborhood and block level and are ✓ Walkability ✓ Visibility Interior (e.g., windows) ✓ Visibility exterior (e.g., balcony) ✓ Character (balcony embellishment, fence) ✓ Frontage dimensions ✓ Contiguous Diversity (mix of building use/purpose (occupied residential units & building rise) ✓ Density (number of occupied residential units per lot & rise of buildings) • Has been validated in studies involving children & adolescents and mental well-being research
Systematic Social Observation (SSO) in the US[71]	• Developed by PHDCN in 1995 • A standardized approach to directly observing neighborhoods' physical, social, and economic characteristics, one block at a time • Developed to assess built environment characteristics upon young people's development. • Data is typically collected through both videotape and observer logs • The domains covered are ✓ Physical Disorder (graffiti) ✓ Social Disorder (fight/hostility in the neighborhood) ✓ Physical Decay (condition of the building) ✓ Commercial building security (properties with pull down metal gates) ✓ Alcohol/Tobacco Advertising ✓ Bars/Liquor Stores • Widely used in the research

PHDCN: Project on Human Development in Chicago Neighborhoods

Governmental (or independent agencies') Guidelines and recommendations on urban development, health facilities, and wellbeing of community members/service users

Many national guidelines and recommendations have been developed to ensure that the urban design and natural environment are protected and used in an eco-friendly manner. This would not only safeguard concurrent urban development and well-being of the community dwellers, but also ensure sustainable development. The guidelines pertain to natural environment, such as green spaces, [72] water bodies, [19,73,73] and building development[18] and urban development. [21] Exclusive guideline on Indian Health facility (2014) is also available, [74] which includes Health Facility Briefing and Design (part-B), Access, Mobility, Occupational Health & Safety (part-c), and Engineering Services and Environmental Design (part-E). The salient points have been highlighted in Table 7.

Table 8: Indian Guidelines for the urban development and environment conservation

Environment or Urban Development Aspect	**Recommendations/Guidelines**
Green space[72]	• Provision of tree cover @ 40,000Sqm. per 2.5 Lacs population • 20 Sqm park area per capita • 9 Sqm unpaved open space per capita • Residential area should be within 15 minutes walking distance to community park • 40 sqm green space (park, forest, roadside greenery) per capita
Land-use policies[21]	• Integrating land use with public transport • Decrease travel time and increase accessibility to the services. • Integrating different modes of travel (walking, bi-cycling, electric rikshaw, public transports, etc.) • 12-16% of urban land to be reserved/used for recreational purpose • Water lands, agricultural areas, green spaces should be balanced with other areas of land use according to the land type and local resources & needs • 10% cities peak electricity requirement to be met by renewal resources • Waste reduction and effective management
Advisory of water bodies in urban area[19,73]	• Good governance harmonious relationship with water bodies, civic participation in water bodies conservation, lake drainage basin, scientifically driven lake management, • Water bodies in an urban area should be identified, and fenced in a way it doesn't obstruct the vision of the people

	• Afforestation to prevent siltation • Peri-shore area should be declared as eco-sensitive area & dumping of solid waste in this area should be a punishable offence • Area surrounding water bodies should be developed as ecological niche with provision of recreational facilities, and public welfare activities • Conservation of water bodies with a balanced team involving irrigation and water resource experts, Public Works Department officials, health departments' officials, state government experts • Inclusion of all stakeholders in water bodies conservation • Adoption of water-centric approach in concurrent & future urbanization • Integrated and time-bound water bodies restoration & protection program • Each urban complex should develop their own water plan & water budget to be self-reliant • Each urban complex should curb the prevailing reliance on drawing water from nearby water reservoir to reduce socio-economic imbalance & reduce the impact on the ecosystem of water bodies • Provision of water-treatment system • Storm-water sedimentation basin
Green cities[21]	• Need of synergies between environment and economic development • Effective land-use (e.g., mixed-land use) • Habitat preservation and restoration (waterbodies, green spaces, open spaces, etc.) • Transit-oriented development: Efficient transport management (networks and connectivity, non-motorized transport) • Efficient use of resources (reduce, reuse, & recycle water resource, wastes) • Efficient energy use (on-site power generation, use of renewal/unconventional sources of energy) • Waste management (waste to energy generation) • 25-35% area of the cities for/complex for recreation. • Basic amenities within 60-800meters (e.g., shopping complex); school, hospital, community centre within 1.6-2kms • Need of differently-abled persons, including elderlies and children, should be accounted while planning & developing green cities
Compact cities[21]	• Prevents urban sprawl • High-density development without compromising QoL • Increase proximity and accessibility to transport and other basic facilities

	• Effective land and containment area use (mixed-land use, multi-functional use in time)
Smart-city[21]	• A city driven by Information, Communication, & Technology (ICT) • Insure transparency, informed, and equitable services • Improves livability, walkability, & sustainability • Based on smart-grid concept (power generation & supply system) • Smart-transport concept: digital view terminals, intelligent roads, and traffic prediction tools • Sensitive and facilitatory to the differently abled persons
Micro-climate changes[21]	• Improves sustainability and quality of urban resources • Considerate to the unique water, sun, humidity, radiation, etc. characteristics of the urban region • Energy efficient landscapes for building and comfortable dwelling • Conducive and efficient street orientation (in direction of wind) • Provision of water bodies (to decrease surface heat) • Open spaces and vegetation: plantation of deciduous plants (Champa & Mulberry) to suit to the sun exposure & wind flow during the different times of a day • Green building & green roof
Brown-field development[21]	• Green remediation (demolish & reconstruct) or renovation (make building or neighbourhood environment-friendly and energy efficient) of existing sites, which are non-environment friendly or degrading
Model Building By-laws[18]	• High-rise building should have peripheral open space of 6meters all around (up to 40 meters building, plus 9meters for height beyond 40meters), ventilated parking area • Building services: adequate and efficient lighting & electricity • Barrier free building and environment (availability of wheelchairs for non-ambulatory individuals, access path of width 1800mm, with slope gradient <5%) • Parking: 2 car parking area for differently abled persons, maximum distance from parking area to main entrance shouldn't be >30meters. • Information for wheelchairs should be conspicuous • Design for children: floor material should be conducive, provision of drinking water, refuge area in case of fire, signage for different facilities • Green building & sustainability provisions: modern building of size >100sqm; efficient water resource and solar energy, energy efficient, and waste management system; one tree/80sqm, compensatory tree plantation 1:3
Hospital built environment[74]	• Hospital built design and functioning should be as per the role delineating level (RDL)

	• Good planning relationship (coordination among different health facilities, independence of units, infrastructural growth potential and scope, safety of the patients and staffs • Local design relationships: waiting area for the family members, prayer area, separate dwelling area for males and females • Parking and vehicular access based on the hospital size, number of staffs, community needs, space, and disable-friendly, continuous access to hospital facilities, and conspicuous signage
Administrative unit of the hospital[20]	• Provision of natural daylights for the staff, esp. those working for long-hours in the office space • Open workstation for easy communication and observation of the patients • Administrative facility should be close to main entrance of the hospital building • Provision of natural light, privacy (in meeting rooms), acoustic performance (high performance at conference rooms) as per the needs, customized sound level & reverberation time
Admission unit[20,75]	• Should be of adequate size to give a sense of space and avoid congestion • Privacy in interview room/cubicle • Provision of natural light, graduated glaze • Usual size of the unit-20-30 beds • One consultation room for every five beds • Signage: clearly visible bed number outside the bed-room or on the head end of the bed within the bedroom/cubicle. • Aesthetic: warm & user-friendly • Acoustic Guidelines for Indian Healthcare Facilities should be followed
Adult mental health in-patient Unit[20]	• Provision of safety glass, low maintenance surface • Least restriction, accommodate all levels of patient, homely environment • Facility should be integrated with other hospital facilities • An open garden, with size of garden attached with HDU being 10 m^2 • Opportunity for moment (both front & back, inconspicuous environmental boundaries, safety provisions) • Clearly defined patients' residential area (esp. for delirious patient) • A balance between privacy and patients being observed by staff • Sound-proof interview room • Group therapy area of minimum size 21m^2 • HDU: separate area for males and females with secured courtyard • Occupational therapy room of size 1.5 m^2 per patient with

	minimum room size of 20 m^2 • Minimum circulation percentage should be 32% to ensure easy movement of the patient, trolleys, walkability, & socialization • Acoustic Guidelines for Indian Healthcare Facilities should be followed
Child and Adolescent mental health in-patient Unit[20]	• Should enable active family involvement in treatment and activities, including provision of accommodation for the families • Able to accommodate children & adolescents with varying level of emotional, social, & intellectual needs • Should collocate with other pediatric activities (e.g., with pediatric ward or day care facilities) • Outdoor space for recreation • Play therapy rooms • Large interview rooms to accommodate family members • HDU: rooms for the family members with shared ensuites • Should be located on the ground floor. • Fittings should have a threshold of 15 kgs to prevent self-harm
Acute mental health Emergency Area[20,75]	• Acutely disturbed mentally ill patient should not disturb routine ED services & vice-versa • Acute psychiatry care facility should have least acoustic and visual exposure to routine emergency services • Patients flow should be separate to maintain privacy • Calming interior, muted colors of the walls/curtains, appropriate lighting • Two rooms: interview room (sound proof, safe) & treatment room (should've at least 12 m^2 floor area) • Acute treatment area: size of at least 9 m^2 , 2.4 m^2 space between beds, light of at least 30000 Lux • Provision of short stay ward • Separate toilet • Should be located in the ground floor, adequate signage, nearby parking facility, natural lights • User-friendly and welcoming environment, including ensuring patients'/caregivers/staff safety, to minimize psychological trauma • Acoustic Guidelines for Indian Healthcare Facilities should be followed
In-patient accommodation unit[20,75]	• Up to 32 beds • For specialty care, say maternity and child ward-20-25 beds optimum • 10% of total beds as isolation rooms • Easy access to lab services, imaging facilities, etc. • Space standards: say for six-bedded room cubicle should've a space 6500*6750 mm^2 • Normalization of disabilities and availing aids (e.g.,

	wheelchair use) • Each room should have a partial blackout facility for privacy & relaxation at the daytime. • General norms of the Indian health facility guidelines, 2014 to be followed. • All rooms should have glazed windows or doors to achieve external views & access to natural lights • The size of net glazed area of should not be less than 10% of the floor area of the concerned room. • Acoustic Guidelines for Indian Healthcare Facilities should be followed
Out-patient facilities[20]	• Pleasant environment for all patient types (those with chronic medical conditions visiting OPD regularly to first- or second-time visitors for some acute issues) • General facilities: mobility aids, space for family with children, adequate lights & acoustic system, provision of privacy (in consultation or procedure room), accessibility (weather-proof vehicle drop-zone), barcode-based registration and investigation system • General norms of the Indian health facility guidelines, 2014 to be followed
Rehabilitation Unit[20]	• Friendly and inviting environment • Non-institutional, safe, & supportive environment • Maximum mobility possible for the inmates • Different rehabilitation facilities (pulmonary-, occupational-, physical medicine- rehabilitation) should be collocated and sharable • General norms of the Indian health facility guidelines, 2014 to be followed

ED: emergency department, HDU: high-dependency unit, mixed-land use: refers to different activities taking place concurrently (e.g., residential & commercial & recreational) or at different time (commercial and recreational). PWD: public welfare department, QoL: quality of life; Sqm.: square meter

Recommendations

Based on the available literature on the urban health, national and international guidelines/policies, this CPG puts forth some recommendations on the various aspects of the environment (built and natural) and well-being of the people can be made. We have attempted to make the recommendations that are relevant in Indian context, including other LAMI countries, and implementable (See Table 9).

Recommendations on environment, urban development, and psychological well-being:

Conserving nature and utilizing it for well-being of the human: Given robust data on positive mental health/well-being of the nature and biodiversity, attempts should be made by the government and policymakers to conserve natural environment and harness its potential for promoting health and well-being; this should also extend to PWMI. The urban development must take into account how integration (or disruption) of nature/biodiversity can affect (positively or negatively) the well-being of the community members. Scientifically informed urban development projects and redevelopment interventions can have long-lasting effect on the health of the people.[-] All efforts must be made to preserve or have sufficient green areas, water bodies and noise reduction.

Table 9. Recommendations on environment, urban development, and psychological well-being:

Conserving nature and utilizing it for well-being of the human	• Government & policymakers should make efforts to conserve natural environment & harness its potential for health promotion • Special consideration must be given to the inherent effect of nature and built environment on mental illness and PWMI • Following national & international guidelines (e.g., Urban Greening Guideline, 2014; Advisory on conservation and restoration of water bodies, 2013) in their letter & spirit
Designing & implementing Environment-friendly policy	• Health & welfare policies must consider environmental aspect of health and wellbeing • Urban development and environmental health must have health indices, including mental health parameters, as outcome measures • Existing guidelines (e.g., Building Bye-laws, 2016, URDPFI guidelines, 2015) on urban design & environment conservation must be abide by
Holistic built environment & neighborhoods	• The urban health must aim to attain holistic built environment & neighborhood • Built environment and natural surroundings must also incorporate residents-welfare schemes, social services, and conducive neighborhood apart from scientifically robust urban built design
Robust plan for socially disadvantaged population	• Effective redevelopment program, and comprehensive plan can improve psychological well-being of community members to a greater extent • Urban planners must also consider

	mediating/moderating factors (e.g., surrounding of neighborhood) affecting the mental health parameters of urban poor or disadvantaged • Creation of smart cities and green cities, and adopting scientific urban design approach (led down by URDPFI, 2015) are vital steps in this context.
Smart cities addressing the unique needs of the vulnerable population	• Innovative or smart cities should be equitably distributed. • They must consider the unique needs of the vulnerable population (elderlies, Child & Adolescents, PWMI, etc.)
Scientifically informed hospital environment and built area	• Hospitals, out-patient, in-patient, & long-stay facilities (dementia care or autism care), must incorporate the scientific urban design frameworks • Services in such settings must be welcoming, homely, supportive, respecting rights of the residents, spatially appealing & facilitatory, & promote a contact with the environment and family members/friends. • TIC must be implemented in emergency departments at the earliest to enhance experience of the service users & for better treatment outcome • Indian Health facility (2014) guideline is a valuable resource material in this regard, which should be adopted during the hospital planning stage followed by functional stage.
Addressing rural-urban divide and its impact on mental health	• Urban areas predispose an individual to develop depression, anxiety, stress, etc. • In contrast, unfavorable rural environment (e.g., lack of resources) can act as persistent stressors and lead to substance-use related problems. • Both urban and rural area should be built in a scientifically robust manner • Both rural and urban areas should be developed in a way that it can ensure holistic care for individuals & persons with mental illness
Multisystemic model of urban health	• The urban develop must involve experts from diverse background (architect, urban planners, researchers, environmentalists, health professionals). • Environmental-friendly and favorable built environment must promote and implemented at

	both macro (Government plans) & micro-level (building structures, neighborhood characteristics)
Validated instruments to study the urban health	• We need to adopt Western tools for the measurement of built environment through robust methodology OR • We must develop our instruments that are sensitive and specific to our environment and built design.
Research on the field of urban health:	• Greater research is warranted in this area. • Interventional study design, longitudinal study, and qualitative study design must be considered to evaluate the effect of environment on mental health & psychological well-being of people.

PWMI: persons with mental illness, TIC-trauma-informed care; URDPFI guidelines: urban and regional development plans formulation and implementation guidelines, 2015.

Environment-friendly policy: All the health and social-welfare-related policies must incorporate the environmental aspects for instance, air quality, green spaces, water quality and noise levels, while framing or implementing the policies/programme. Similarly, urban development and environment-related projects should include well-being, and mental health related parameters to evaluate the impact of such interventions on the population. Local communities should have an important role in policy/project development and implementation, with their views being considered and valued in decision-making processes. This inclusive, community-led approach, supported by cultural sensitivity and education, will serve as the cornerstone for comprehensive, effective environment friendly policy.

Holistic built environment and neighborhoods: Research has informed us that it's not only the nature and neighborhood characteristics that influence our health and well-being, but how comprehensive or holistically they have been incorporated. A holistic built environment involves catering to the needs of the community dwellers (including children and adolescents elderlies, persons with mental illness or physical limitations), incorporating the residential welfare services, surrounding neighborhood of a given neighborhood (relative placement of the green and water spaces and community recreational facilities), and promoting social interaction, including strengthening the social capital, and interaction with nature. Therefore, urban development, including residential areas, needs to be holistic and integrative to ensure

better health and well-being of the community dwellers. Green cities, compact cities, scientifically-sound high-rise, efficient land-use policies, micro-climate changes, and Brown-field development as per the standard guidelines are crucial steps in this regard (Table 8).

Robust urban development programme for socially disadvantaged population: Given that socially-disadvantaged communities are at higher odds of experiencing the negative impact of the unfavorable built environment (or neighborhood) and the positive role of the poor-friendly urban development programme in improving the QoL, well-being and mental health these group of people, urban health must be in fore-front while framing development or renovation programme for slum or socially-deprived communities. Smart cities, model-building bye-laws, urban and regional development plans, transit-oriented development, and adopting provisions of Indian health facility guidelines for the differently-abled- individuals are valuable guiding resources in this context.

Smart cities addressing the unique needs of the vulnerable population: In our country, smart city project is run in mission mode; with the government infusing substantial resources into this, it's crucial that such proposed digitally driven projects should address the unique needs of the elderlies and children with special needs (e.g., children with autism). A holistic neighborhood environment and appropriately placed services (transport, communication system, internet, walking zone, recreational centres, schools, social services, etc.) should be designed that would be favorable to elderlies and children. Moreover, such innovative projects should not remain restricted to metropolitan cities or some tier-2 cities but should spread across the states and rural regions; this would prevent the negative impact of otherwise discriminatory urban development and resource allocations on the well-being of the people.

Institutional and hospital facilities and mental health: A user-friendly hospital environment, may it be in-patient, out-patient, rehabilitation, administrative, or emergency unit, that is welcoming, supportive, least-restrictive, connected to the nature, and homely is cornerstone of well-being and positive mental health of the service users.

For instance, a TIC (user-friendly environment, respect of rights and privacy of the patients/caregivers, effective communication between the staff and service users, and prompt service provisions) should be adopted at the earliest at the emergency health settings in all

hospitals. A TIC would prevent re-traumatization of the visitors of the ED, including those with psychological traumas or mental health conditions. Furthermore, an effective peer-support system, preventing overcrowding in such vulnerable places, and ensuring the safety of health providers and patients will promote the service providers' well-being and mental health. Likewise, out-patient, in-patient, or residential facilities need to be aligned to the standards of the Indian health facility Guidelines (2014), particularly those catering to the PWMI, children, and elderlies. Preventing overcrowding, provision of quality water, food, and lights, washrooms, open spaces, spaces for socialization, green environment, recreational facilities, less restrictive environment, non-threatening and supportive treatment regimes, and provision of privacy is vital in promoting well-being and mental health of the residents of such facilities. Specific and person-centric care for persons with dementia and children with autism and, for that matter, other mental health or physical conditions are vital for ensuring positive residential experiences for these individuals.

Adopting a multisystem and multi-disciplinary model of urban development: A multisystem and multi-disciplinary approach involving urban designers, researcher, administrators, service users, and health professionals are critical in ensuring that the science of urban health is incorporated at the stage of planning and redevelopment of the urban infrastructure and all system levels (global or national, local, household, and individual). Such an approach will ensure better mental health and well-being of the people. This includes conservation of nature, such as green spaces, water bodies, and biodiversity. Urban development needs to be integrated/synergized with the existing natural environment. Adhering to the guidelines of the Urban Greening Guideline (2014), Advisory on conservation and restoration of water bodies (2013), etc., could be vital in concerning this.

Developing instruments to study urban health: As highlighted previously, we do not have a validated tool that can accurately assess the built environment and its effect on people's health. This lack significantly affects the growth of research on urban health in our country. Therefore, efforts should be made to develop our own validated instruments to study the impact of the environment on people's health or adopt a methodologically effective way of measuring tools developed by high-income countries. Various stakeholders must be part of

such tool development so that these instruments remain comprehensive and useful in different settings and population groups.

Research on the field of urban health: Greater research, particularly randomized control trials and longitudinal study designs, is required in urban health. Qualitative studies must be conducted to elucidate the granular information on this topic, including the mechanism behind change brought out by innovative urban health design. Robust methodologies should be utilized to study the causal relationship and path analysis of the built environment and mental health parameters. Research on this topic must involve different stakeholders, including experts from diverse fields, so it can be implementable at the ground level and widely applied. Similarly, various mediating and moderating factors (e.g., individual characteristics, gene-environment interaction, neighborhood characteristics, quality of the natural environment) must be incorporated and analyzed through sophisticated statistical tests so that they can be appropriately considered while planning urban development and hospital or workplace environment.

Conclusion:

Environment, well-being and mental health are intricately related. A conducive neighborhood can be health promoting; in contrast, unfavorable environment can house stress, and various psychological problems. Urban planners, researchers, and health professionals should work in tandem to harness the inherent potential of the natural and built environment to bring about a positive change in lives of the community dwellers, or at least prevent the ill-effect of otherwise poorly planned urban development. Following urban development and natural resource conservation guidelines/policies in their latter and spirit can pave a way in long-run, including ensuring sustainable urban development. Greater research in this area, particularly from India, is required in this topic.

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