

Title Page

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An approach to a patient with sexual disorders in consultation liaison psychiatry

Executive summary

Sexual dysfunction is a common, multifactorial and often under-recognised problem among patients seen in Consultation Liaison psychiatry (CLP), arising from the interplay of chronic medical illness, comorbid psychiatric disorder, and psychosocial and cultural context. CL psychiatry has a significant overlap with pain management, neuropsychiatry and psychosomatic medicine which includes psychosexual disorders. Data for sexual disorders (SD) in general medical conditions is complicated owing to the difference in methodology of data collection. Sexual disorders often serve as the initial clinical presentation for underlying chronic physical illness. Eighty seven and a half percent individuals with chronic obstructive pulmonary disease (COPD) suffer from sexual dysfunction. Multifactorial causation is best explained by the biopsychosocial model. Many medical and surgical conditions have effects on central and peripheral physiology of the sexual response cycle leading to sexual problems. Hypersexuality is classified in the ICD-11 (International classification of diseases 11th edition) as an impulse control disorder. It is estimated that 3% to 6% of the general population are affected. A structured biopsychosocial assessment — incorporating validated instruments where feasible, explicit screening for depression and anxiety, and attention to culturally specific indications of distress — should precede management. Non-pharmacological, stepped interventions such as PLISSIT/EX-PLISSIT and formal sex therapy should generally be offered as first-line management and liaison with the relevant specialty for appropriate treatment of the underlying medical condition. Pharmacological measures for treatment of the sexual dysfunction may be considered in adjunct to these.

Introduction

Classically, three dimensions of sexuality have been defined: biological, psychological and sociocultural. Biological factors that influence sexual response and arousal include general health, age, hormonal status, chromosomal status and nutritional states but are not limited to these. Further biological factors that influence sexuality include secondary sexual characteristics, gender roles, gender identities and rearing in relation to sex. Sexual function and activity are closely linked with physical health, hence understanding sexual function in these various general medical conditions becomes very

important. Recent research has concluded that sexual stimuli are given priority in a person's memory and cognitive processing when compared to other stimuli.

Significance of consultation–liaison (CL) psychiatry in sexual disorders

Sexual behaviour has certain positive health effects. Poor sexual functioning may be linked to a serious underlying pathology affecting the psyche of an individual. For example: erections rely on healthy vessels, nerves, muscles and various hormones hence erectile dysfunction (ED) can be taken as an early marker of various physical health conditions. Diabetic neuropathy can cause impaired sexual desire in women. This brings us to the significance of consultation–liaison psychiatry (CLP) in sexual disorders. CLP has a significant overlap with pain management, neuropsychiatry and psychosomatic medicine which includes psychosexual disorders.¹

CLP emerged in the mid-1960s from the grid of psychoanalytically oriented psycho-somatic medicine. Psychoanalysis waned in the early 1980s with most liaison (CL) consultation- services converting into consultation services.¹ CLP is still a naïve branch in India. Ideally CLP should be a liaison based model with proper interdisciplinary discussion. However, CLP has currently become a consultation based model with significant heterogeneity in training and limited research. As per the DSM-5 (Diagnostic and statistical manual of mental disorders 5th Edition) we cannot have a psychiatric diagnosis for a sexual problem if the presumed etiology is a medical condition. However, in clinical reality these are not fixed boundaries. For example, a person with newly diagnosed cancer can develop adjustment issues and erectile dysfunction (ED) which can be worsened by chemotherapy. The physician may not be able to decipher the exact etiology of the sexual problem and the responsibility for the same lies with the CL psychiatrist.²

These CPGs (Clinical Practice Guidelines) would act as a guide for the CL psychiatrist to deal with sexual problems in the medical setting.

Epidemiology

Epidemiology

Data for sexual disorders (SD) in general medical conditions is complicated owing to the difference in methodology of data collection. Further SD is classified as of 'medical' or 'psychiatric' origin which makes data from studies difficult to compare. SDs due to general medical condition or medications (hence not primary) can present to the CL psychiatrist.

Cultural stigma often leads to delayed care seeking in India. Sexual disorders often serve as the initial clinical presentation for underlying chronic physical illness.³ A meta-analysis found that 60.57% of patients with type 2 diabetes mellitus in India experience erectile dysfunction (ED).⁴ Many studies have concluded that high rates of sexual dysfunction are there in individuals with hypertension and on

73 antihypertensives. Eighty seven and a half percent individuals with chronic obstructive pulmonary
74 disease (COPD)suffer from sexual dysfunction.³

75 The United States National Health and Social Life Survey concluded that prevalence of SD in women
76 (43%) is greater when compared to SDs in men (31%). Advancing age, drugs and presence of one
77 comorbid general medical condition increased the risk of arousal problems in women and erection
78 problems in men by 1.5 times.

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80 A study done in Germany on 2531 subjects (involving both males and females) were studied using the
81 Female Sexual Function Index (FSFI-d), International Index of Erectile Function (IIEF-5)for health and
82 impairment subsequent to chronic disease. The “scale of current disorders with associated impairment”
83 of the self-administered comorbidity questionnaire (SCQ) was also used. The study concluded that
84 76.2% of women and 76.0% of men with at least one chronic disease with an associated impairment
85 reported simultaneously about sexual dysfunction. Chronic diseases were more commonly associated
86 with sexual dysfunction. For example, 77.8% of all men with hypertension also reported erectile
87 dysfunction. Relative (N) and absolute rates (%) of men with erectile dysfunction and women with
88 sexual dysfunction are mentioned in table 1.⁵ Estimated prevalence and type of sexual disorders with
89 different chronic physical illnesses is mentioned in table 2.⁶

90
91 **Table 1: Relative (N) and absolute rates (%) of men with erectile dysfunction and women with**
92 **sexual dysfunction**

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Disease	Erectile dysfunction %(N)	Sexual dysfunction in women %(N)
Hypertension	77.8(154)	78.7(122)
Heart Disease	82.4(42)	86.0 (37)
Depression	66.7(40)	78.3(65)
Diabetes	81.0(51)	87.5(49)
Inflammatory Rheumatism	78.9(30)	85.4(41)

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98 **Table 2 : Prevalence and type of sexual disorders in chronic physical illnesses**

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Physical disorder	Prevalence of sexual dysfunction	Common sexual problems
Cardiovascular disease	40-75%	Erectile dysfunction (ED), reduced sexual activity, decreased desire
Neurological disorders (Stroke, multiple sclerosis)	40-80%	ED, orgasmic dysfunction, decreased libido
Diabetes Mellitus	35-75% in men, 20-70% in women	ED, decreased libido, orgasmic dysfunction
Hypertension	20-50%	ED, reduced libido (often medication related)
Chronic Kidney Disease	50-80%	ED, decreased libido, menstrual irregularities
Chronic Liver Disease	30-70%	Reduced libido, ED, menstrual irregularities
Chronic Obstructive Pulmonary Disease	60-80%	Reduced desire, dyspareunia, ED
Cancer (all types)	40-100%	Loss of desire, ED, vaginal dryness, body image concerns
Parkinson's disease	40-70%	Decreased libido, ED, orgasmic difficulties
Epilepsy	30-60%	Reduced libido, ED, menstrual dysfunction
Rheumatoid Arthritis	30-76%	Pain related sexual difficulties, decreased desire
Obesity	30-60%	ED, reduced satisfaction, decreased libido
Thyroid disorders	20-60%	Libido changes, ED, menstrual abnormalities
HIV/AIDS	30-70%	Decreased libido, ED, Orgasmic dysfunction

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Etiopathogenesis

Sexual dysfunction in chronic physical illness arises from the interplay of disease related biological changes, treatment effects, psychological distress, and sociocultural influences.⁷ Chronic disease interferes with sexual functioning by altering relationships and self-image. Multifactorial causation is a rule rather than an exception. This is best explained by the **biopsychosocial model**. Figure 1 covers in brief the biopsychosocial model of sexual disorders in medical conditions.²

General medical conditions have an impact on the central and peripheral physiology of sexual response cycle. For example, neurological diseases impair arousal and orgasm, while hormonal imbalances can directly affect sexual desire and genital engorgement. Systemic illness like cardiovascular disease and diabetes can directly impact sexual functioning. Chronic pain can adversely affect the sexual response cycle. Chronic general medical conditions interfere with sexual functioning by creating a negative body image, poor self-esteem, and dysfunctional intimate relationships. The traditional belief that sexual dysfunction has either organic or psychological etiology has been replaced by an understanding that the two are inseparably combined.^{8,9} Psychological and sociocultural factors such as coping style, personality, adjustment reactions, couple relationship and social support can modulate immune, endocrine and neurological mechanisms causing sexual dysfunction. The various medical conditions affect the biopsychosocial characteristics of an individual and may lead to a sexual disorder. Table 3 gives a brief overview of medical conditions associated with sexual disorders. Various medical conditions associated with sexual disorders are mentioned in Table 1. The psychosocial aspects of these medical conditions can disrupt the physiology of sexual functioning. Genetic makeup of an individual, external stressors, personality and social support can modulate the inflammatory and immune response and can engage the neurological and endocrine systems and almost any other system of the body.

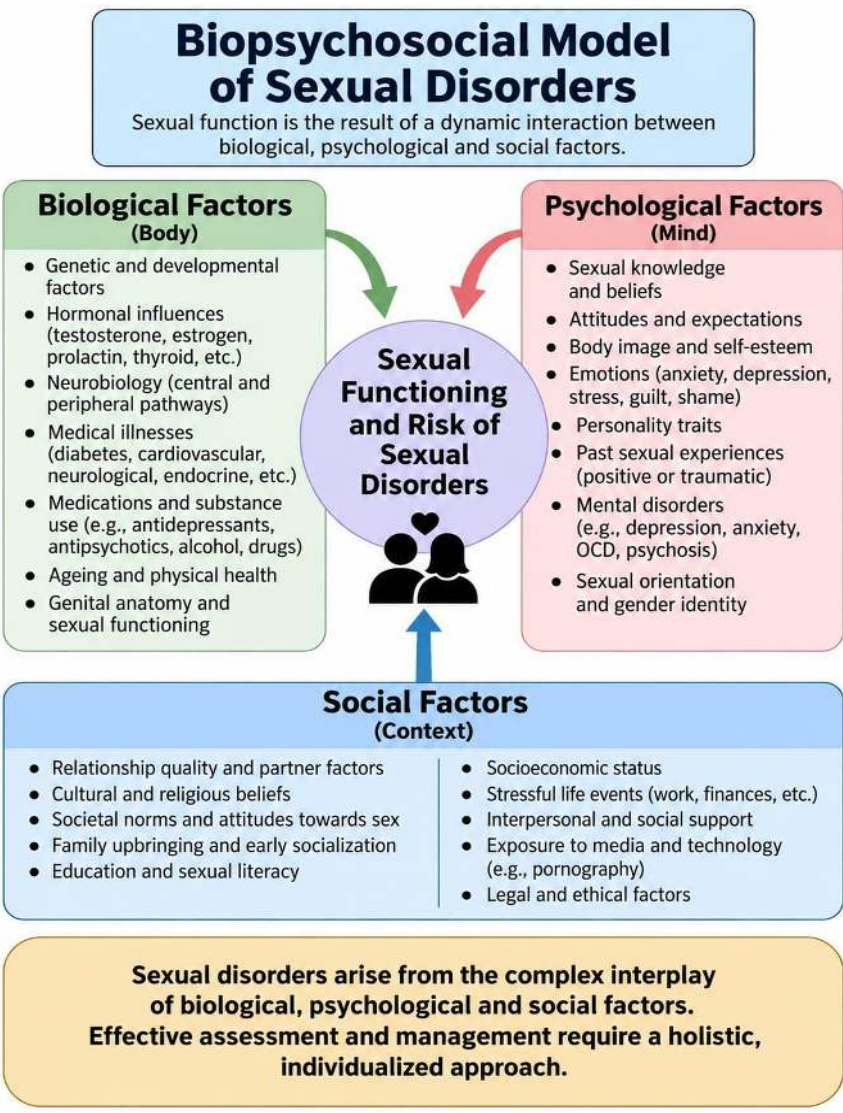


Figure 1: The biopsychosocial model of sexual disorders (Source: CGPT assisted and other references)

Table 3: Medical Conditions associated with sexual disorders

Disorders	Specific conditions
Cardiovascular system	Hypertension, coronary artery disease peripheral vascular disease heart failure
Neurological system	Cardiovascular Accident (CVA) multiple sclerosis, epilepsy dementia, head injury, parkinsonism, spinal cord injury, neuropathy
Endocrine and Metabolic system	Diabetes mellitus, thyroid disorders, hypogonadism, hyperprolactinemia, obesity
Malignancy	Cancers, surgery, chemotherapy, radiation
Others	Connective tissue disorders, chronic kidney disease, osteoarthritis, chronic obstructive pulmonary disease, urinary tract infection, HIV, infectious disease, transplantation, dermatological disorders, pain disorders, nutritional disorders, Obstetric, Gynaecologic disorders, urologic disorders

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Referral indications and interdisciplinary co-management:

Multidisciplinary care models require structured interprofessional communication, shared pathways of decision-making and parallel diagnostic assessments to optimize functional recovery, psychotropic safety, treatment adherence and overall patient quality of life.

Formal psychiatric consultation within sexual medicine services is indicated when-

- Sexual dysfunction as a consequence of primary psychiatric disorders such as major depressive disorder, anxiety spectrum disorders, or trauma-related conditions.

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- Psychotropic pharmacotherapy causes intolerable sexual adverse effects, thus compromising medication compliance and psychiatric stability.
- Organic disease or surgical intervention causes severe psychosexual distress, body image disruption, or relationship dysfunction.
- Diagnostic uncertainty exists regarding the relative contributions of organic versus psychogenic factors.
- Patient distress or interpersonal conflict impairs engagement with necessary medical or physical rehabilitation protocols.

The Roles of Certain Medical and Surgical Specialties

Endocrinology

Endocrinologists assess primary and secondary neuroendocrine axis abnormalities that impact sexual desire, erectile function, and integrity of genital tissue. CL psychiatrists work with endocrinologists to treat central hypogonadism, prolactin secreting pituitary lesions, thyroid dysregulation and complex metabolic states.² Coordinated management allows the safe combination of hormone replacement therapy, e.g. testosterone substitution, with psychotropic regimens, particularly when mood symptoms coexist with endocrine deficits.¹⁰

Urology

Urologists guide the diagnostic evaluation of organic erectile dysfunction, Peyronie's disease, ejaculatory disorders, and structural genital abnormalities. Coordination of medical (e.g. phosphodiesterase-5 inhibitors [PDE5i], intracavernosal injections) or surgical (e.g. penile prosthesis implantation) therapies with psychiatric interventions for performance anxiety, loss of masculine self-efficacy or post-prostatectomy reactive depression is required in liaison with urology.^{10,11}

Gynecology

Gynaecologists evaluate genitopelvic pain/penetration disorder (GPPPD), deep dyspareunia, endometriosis, pelvic floor hypertonicity and vulvovaginal atrophy. Postpartum dysfunction affects up to 83% of women, with perineal pain and burning dyspareunia as presenting complaints. Co-management blends pelvic floor physical therapy and gynecological procedures with psychiatric treatments for trauma, fear-avoidance conditioning, and vaginismus muscle hypertonicity.¹³

Dermatology & Venereology

Dermatologists and venereologists not only treat sexually transmitted infections, but also chronic vulvovaginal and penile dermatoses, such as lichen sclerosus and erosive lichen planus. CL psychiatrists work with chronic genital pain, structural disfigurement, or the stigma of infectious disease, which are leading to severe health anxiety, somatic preoccupation, or avoidance of sexual intimacy.^{2,14}

193 **Neurology**

194 Sexual dysfunction (SD) may be the presenting symptom of a neurological disorder. Neurologists
195 assess neurogenic sexual dysfunction secondary to pathology of the central or peripheral nervous
196 system including multiple sclerosis, Parkinson's disease, spinal cord injury, and stroke.² CL
197 psychiatrists assist in distinguishing primary neurogenic arousal and ejaculatory deficits from
198 secondary depressive symptoms, neurocognitive decline or impulse control disorders such as
199 dopamine dysregulation syndrome. The best predictor of decreased sexual activity in patients with
200 history of stroke is the degree of dependence in activities of daily living.

201 **Oncology**

202 Oncologists treat malignancies that affect sexual function with radical surgery, pelvic radiation,
203 chemotherapy or chronic endocrine suppression. The CL psychiatrist deals with psychosexual
204 adaptation after radical pelvic or oncological breast surgeries, and with iatrogenically induced
205 menopausal or hypogonadal states as well as with cancer-related distress.¹⁵

206 **Cardiology**

207 Cardiologists stratify cardiovascular risk before starting pro-erectile pharmacotherapy, using
208 established frameworks such as the Princeton Consensus Guidelines. Collaborative liaison psychiatrists
209 differentiate organic vasculogenic erectile dysfunction from post-myocardial infarction coital anxiety
210 ("kinesiophobia") and manage the sexual side effects of antihypertensive agents.¹⁶

211 **Reproductive Medicine and Infertility**

212 Reproductive specialists work with individuals and couples using assisted reproductive technology
213 (ART). Infertility carries a heavy burden of South Asian patriarchal stigma, domestic violence and
214 deep depression. In vitro fertility (IVF) cycles destroy spontaneity, leading to intimacy burnout and
215 male temporary ejaculation failure (TEF) in 10% of cases on oocyte retrieval day. Severe
216 psychosexual stress, performance-bound sexual dysfunction and loss of sexual spontaneity are often
217 associated with infertility protocols. CL psychiatrists provide crisis intervention, couple-based
218 psychological support, and psychotropic management that balances psychiatric stability and
219 reproductive safety.

220 **General Medical Conditions and Their Effects on Central and Peripheral Physiology of the** 221 **Sexual Response Cycle**

222 Sexual arousal is a four-phase process (desire, arousal, orgasm and resolution) integrated and
223 orchestrated by central, peripheral and endocrine mechanisms(see fig. 2). Centrally, libido and sexual
224 drive are regulated by limbic and hypothalamic pathways with dopaminergic and other
225 neurotransmitter inputs (dopamine increases desire; serotonin tends to suppress it). Peripheral arousal
226 is mediated by autonomic nerves: parasympathetic vasodilation (via nitric oxide) engorges genital
227 tissues (erection, vaginal lubrication), and sympathetic activity mediates orgasm and ejaculation. All
228 phases are influenced by hormones - androgens (testosterone) increase desire and arousal in both
229 sexes, estrogen increases vaginal blood flow and lubrication, prolactin and oxytocin increase during

230 orgasm. Any disturbance, be it neural,vascular, or hormonal, may modify one or more phases of the
231 response cycle. Common medical illnesses can interfere through these mechanisms (see Table 4). For
232 example, diabetes mellitus impairs vascular and nerve function, chronic hyperglycemia causes
233 endothelial dysfunction (decreased nitric oxide) and peripheral/autonomic neuropathy, leading to
234 erectile dysfunction and diminished genital sensation. Hypogonadism (low testosterone) is also
235 common in men with diabetes and decreases libido further. Women with diabetes are frequently faced
236 with hypoactive desire, arousal problems, dyspareunia and orgasmic difficulty. All diabetic patients
237 with sexual dysfunction should be screened for cardiovascular risk factors, as erectile dysfunction
238 (ED) may be the first manifestation of overt cardiovascular disease.

239 **Atherosclerosis** of penile and vaginal arteries is one of the causes of sexual dysfunction due to
240 cardiovascular disease and hypertension. ED is common in men with coronary artery disease and ED
241 is an independent risk marker for CVD. Shared risk factors (hypertension, dyslipidemia, smoking)
242 promote endothelial injury. Many antihypertensive drugs (e.g. beta blockers, thiazides) can also
243 reduce libido or erectile function. Therefore, cardiology liaison is indicated in men with ED and
244 vascular disease; cardiac rehabilitation can improve sexual health and PDE5 (Phosphodiesterase)
245 inhibitors are generally safe in cardiac patients.¹⁷

246 **Endocrine disorders** have a direct effect on sexual physiology. Low testosterone levels (male
247 hypogonadism) diminish sexual desire and add to ED. In women, menopause (natural or surgical)
248 induces estrogen withdrawal, with vaginal dryness, dyspareunia and loss of libido.
249 Hyperprolactinemia (due to pituitary tumors or medications) inhibits GnRH (Gonadotropin releasing
250 hormone) and gonadal steroids, leading to amenorrhea and loss of libido in women and ED in men.
251 Thyroid dysfunction may also affect sex drive: both hypo- and hyperthyroidism are associated with
252 low desire and arousal problems (reversible with normalization). Psychiatric liaison can pick up such
253 endocrine causes and initiate hormonal testing or endocrine referral.¹⁸

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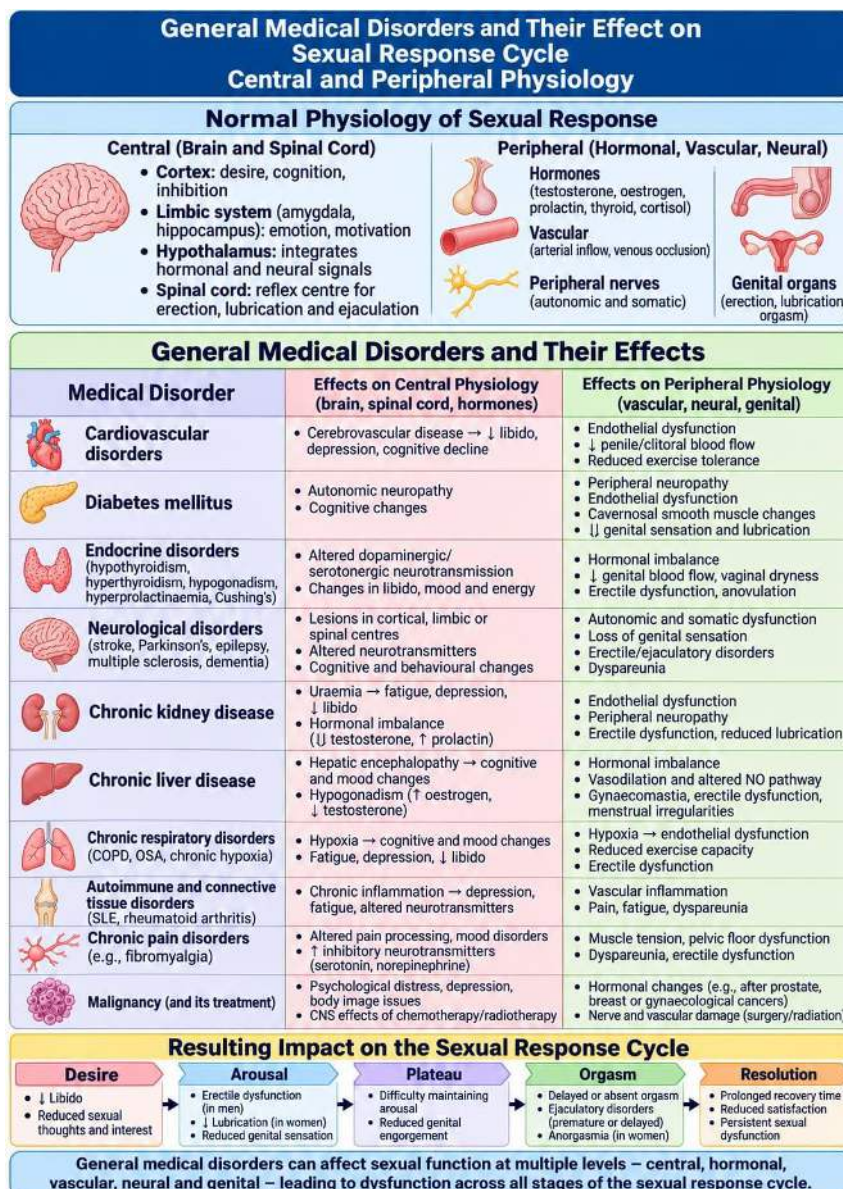


Figure 2: General medical disorders and their effect on sexual response cycle. Source: CGPT assisted and other references

Neurological diseases may disrupt the nerve pathways of arousal and orgasm. Stroke and spinal cord injury can interrupt ascending sensory fibers or descending autonomic signals and thus lead to erectile

265 failure, vaginal numbness, or inability to orgasm. Movement disorders (e.g. Parkinson's disease)
266 change dopamine and norepinephrine in brain circuits, frequently leading to reduced libido and
267 erectile and ejaculatory problems; dopaminergic therapies can also cause hypersexuality or impulse
268 control problems in some patients.

269 **Hypersexuality** is a complex neuropsychiatric problem characterized by repetitive, persistent and
270 intense preoccupation with sexual fantasies, urges and behaviors causing clinically significant distress
271 or functional impairment, which requires clear differentiation from normal variations in high desire,
272 mania, substance intoxication and Compulsive Sexual Behavior Disorder (CSBD), classified in the
273 ICD-11 as an impulse control disorder. It is estimated that 3% to 6% of the general population are
274 affected, with a higher prevalence in males and increases dramatically in clinical cohorts:
275 approximately 7% to 9% of Parkinson's disease patients treated with dopaminergic medications
276 develop hypersexuality as part of an impulse control disorder, and is reported during acute
277 symptomatic episodes in 50% of males and 33% of females with Kleine-Levin syndrome. High
278 prevalence is also observed in temporal lobe epilepsy, frontal lobe lesions, and early-stage
279 neurodegenerative dementias

280 **Multiple sclerosis** is often associated with sexual dysfunction, with lesions in spinal autonomic tracts
281 leading to genital anesthesia and difficulty with arousal, and secondary barriers from spasticity,
282 fatigue and bladder dysfunction. In MS, sexual dysfunction is caused by primary neural injury
283 (numbness, ED), secondary factors (spasticity, pain), and tertiary psychosocial issues (depression, fear
284 of symptoms). Epilepsy and anticonvulsant medications can cause sexual side effects (e.g., weight
285 gain, sedation) and reduce libido. Liaison psychiatrists should liaise with neurology to balance seizure
286 control and sexual side effects, and provide counselling on adaptive strategies.

287 Sexual health is also compromised by **chronic kidney disease (CKD) and liver disease**. Uremia in
288 CKD leads to hormonal imbalances (low testosterone, hyperprolactin), endothelial dysfunction, and
289 polyneuropathy, causing ED and decreased libido. Hemodialysis often restores some function but
290 patients may still have fatigue and body image issues (vascular access fistulas) which affect sexuality.
291 In cirrhosis impaired liver metabolism increases sex-hormone binding globulin and estrogen levels,
292 leading to hypogonadism in men and menstrual irregularities in women; ascites and fatigue further
293 diminish libido.

294 Many of the above factors come together in **obesity and metabolic syndrome**. Insulin resistance and
295 inflammation damage blood vessels and nerves, and adiposity decreases testosterone (by increased
296 aromatization) and increases inflammatory cytokines that blunt erections. This is often worsened by
297 comorbid diabetes, hypertension and dyslipidemia, which these patients frequently have. Lifestyle
298 weight loss interventions often improve sexual function.

299 **Chronic pain syndromes** (eg, low back pain, fibromyalgia) may diminish sexual interest through
300 fatigue, depressed mood, and pharmacologic effects. Long term opioid therapy is often associated
301 with opioid induced androgen deficiency (hypogonadism) leading to loss of libido and erectile/vaginal

dryness. Psychiatrists should work with pain specialists to limit the use of opioids to pain management whenever possible.

Malignancy influences sexuality in many ways.¹⁹ Surgery on sexual organs (prostate, testicles, bladder, cervix, rectum) or tumors can physically damage structures or nerves. Chemotherapy and radiation can cause early menopause or testicular failure. Hormonal treatments for cancer (prostate cancer: androgen deprivation therapy; breast cancer: anti-estrogens) drastically lower libido and result in genital atrophy. Also, there psychological effect that cancer diagnosis and body changes (amputation, mastectomy, ostomy) have on sexual self-image. Liaison psychiatrists need to screen for sexual dysfunction after cancer, provide counselling about sexuality in survivorship, and refer for urogenital/gynecological or psychosexual therapy as appropriate.

Table 4: Common Medical Disorders, Mechanisms of Sexual Dysfunction, and Typical Manifestations

Disorder	Mechanisms	Sexual Effects
Diabetes Mellitus	Vascular (endothelial dysfunction), peripheral/autonomic neuropathy, low testosterone	Men: erectile dysfunction (often severe), low libido; Women: hypoactive desire, arousal disorder, dyspareunia, orgasm difficulties
Cardiovascular Disease	Atherosclerosis of penile/vaginal vessels; shared risk factors (HTN, smoking)	Erectile dysfunction (early warning of CVD); in women, impaired arousal and decreased lubrication
Hypertension	Arterial stiffness, antihypertensive drugs (β-blockers, diuretics)	Erectile dysfunction, reduced sexual desire
Hypogonadism	Low testosterone (primary or secondary); low estrogen in women	Decreased libido, erectile dysfunction (men), vaginal dryness/anorgasmia (women)
Thyroid Disorders	Hypothyroid or hyperthyroid hormonal imbalance	Low libido, erectile dysfunction; in women

Disorder	Mechanisms	Sexual Effects
		menstrual changes and reduced arousal
Hyperprolactinemia	Pituitary adenomas or drugs ↑ prolactin	Amenorrhea, galactorrhea, low libido (women); low libido, erectile dysfunction (men)
Stroke	CNS infarct affecting sexual centers or pathways; fatigue; depression	Loss of desire, erectile dysfunction, reduced genital sensation; anorgasmia; incontinence may affect intercourse
Parkinson's Disease	Dopaminergic neuron loss; treatment side effects	Decreased libido; erectile and ejaculatory dysfunction; dopamine agonists can cause hypersexuality in some cases
Multiple Sclerosis	Demyelination of spinal/cortical sexual pathways; fatigue/spasticity; mood	Men: ED, delayed ejaculation, genital numbness; Women: decreased lubrication, orgasmic difficulty, loss of libido
Epilepsy	Seizure foci in limbic system; antiepileptic meds (sedation, weight gain)	Reduced libido and arousal; antiepileptics may cause ED or menstrual irregularities
Chronic Kidney Disease	Uremic toxins, anemia, neuropathy; hormonal (low T, high LH/FSH, hyperprolactin)	High prevalence of ED (up to 70%), low libido; in women premature menopause, vaginal dryness
Chronic Liver Disease	Cirrhosis: ↑SHBG/estrogens, ↓testosterone, malnutrition	Men: gynecomastia, ED, low libido; Women: menstrual

Disorder	Mechanisms	Sexual Effects
		disturbances, loss of sexual desire
Obesity/Metabolic Syndrome	Insulin resistance, inflammation, low testosterone (men), hypoestrogenism (men), psychosocial	ED (high prevalence), decreased arousal; in women lower sexual satisfaction, lubrication issues
Chronic Pain	Central pain processing, analgesic effects (esp. opioids → ↓GnRH/testosterone), depression	Loss of sexual desire, erectile failure, dyspareunia; opioid-induced hypogonadism is common in men
Cancer (e.g. breast, prostate)	Tumor or surgical removal (loss of organ function), chemotherapy (gonadal toxicity), radiation, HRT for cancer (e.g. ADT)	Profound loss of libido, erectile or orgasmic dysfunction; vaginal dryness; significant body image/psychosexual issues

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316 **Surgical conditions and sexual function**

317 Injuries to the nerves, blood vessels, hormones and the patient's psychology can all affect sexual
318 function, after surgery, to the pelvis or nearby areas. Liaison psychiatrists should screen patients
319 postoperatively for sexual concerns and facilitate rehabilitation. The main procedures are:

320 • **Pelvic Surgery** (e.g. radical prostatectomy, cystectomy, rectal cancer surgery): Damage to
321 autonomic nerves (pelvic plexus, cavernous nerves) or blood vessels can be caused by surgical
322 dissection. Radical prostatectomy injury to the cavernous nerve is a frequent cause of ED in most
323 men. Low anterior resection for rectal cancer may also damage erectile and ejaculatory function and
324 may cause dyspareunia in case of damage to female pelvic autonomic nerves. Urinary or fecal
325 diversions (urostomies/colostomies) add a significant body-image and intimacy burden . CL
326 psychiatrists should work with surgeons and uro-gynecologists: suggest penile rehabilitation (vacuum
327 devices, PDE5 early) after prostatectomy, refer women for vaginal dilator therapy or lubrication after
328 colorectal surgery, and address body image with counseling.

329 • **Hysterectomy**: Removal of the uterus (and sometimes the cervix) may change the integrity of the
330 pelvic nerves depending on the extent of surgery. If the ovaries are spared, hormonal levels can
331 remain the same. But some women do experience a change in orgasm quality, due to disruption of
332 uterine support. The total hysterectomy with oophorectomy results in the surgical menopause – with

vaginal atrophy, loss of libido and dyspareunia. Arrange for a referral to gynecology for possible estrogen (systemic or local) therapy and pelvic floor rehabilitation. Psychological sequelae (grief over loss of fertility or femininity) are common; offer sex therapy, support groups.

- **Oophorectomy:** Removal of both ovaries at any age leads to a sudden loss of estrogen and androgens, often resulting in severe HSDD and genitourinary syndrome of menopause (dryness, painful intercourse). Discuss hormone replacement or low-dose testosterone with endocrinology or gynecology and refer for counseling to cope with surgical menopause, even in younger women.
- **Colorectal Surgery:** Apart from nerve damage as noted above, abdominoperineal resections (e.g., anal or low rectal cancers) can damage sacral nerves that control genital arousal. Scar tissue and adhesions can cause pain during intercourse. Sexual dissatisfaction in patients with permanent colostomies may be related to body image concerns and liaison psychiatrists should address these concerns and consider referral to sex therapy or stoma counseling.
- **Bariatric Surgery:** Weight-loss surgery (gastric bypass, sleeve gastrectomy) usually improves sexual function by correcting obesity-related ED and hormonal imbalances. Indeed many men report improved erections and women report improved satisfaction as comorbidities improve. However rapid weight loss may lead to nutritional deficiencies (e.g. vitamin D or B12) that can sometimes worsen libido. Encourage participation in couples counseling and sexual activity as fitness allows postoperatively.
- **Breast Cancer Surgery:** Mastectomy or lumpectomy can have a profound impact on a woman's body image and sexual confidence. Loss of erogenous sensation of the breast/nipple may decrease arousal and orgasmic response. In addition, adjuvant treatments (tamoxifen, aromatase inhibitors) can result in vaginal dryness and decrease in libido. CL psychiatrists should collaborate with oncologists and gynecologists to address these effects (e.g., lubricants, vaginal estrogen if safe) and with psychologists to facilitate adaptation to body image (e.g., discussing reconstruction or prosthesis options).
- **Spinal Surgery and Disorders:** Surgery of the spine (such as for scoliosis or trauma) can inadvertently affect sexual function. For example, lumbar fusions or laminectomies rarely result in sexual dysfunction unless there is associated nerve root injury. Spinal cord injuries (traumatic or surgical) more often lead to major sexual deficits (depending on level: injuries above T11 generally allow reflex erections/orgasms; lower injuries more likely lead to impotence). Liaison psychiatrists should work with physiatrists to optimize neurological recovery and refer for devices or therapies for sexual function (eg, penile implants, vibratory stimulation).

In all these contexts body image and psychological factors are crucial. Patients might be anxious about resuming sex (fear of pain or harming surgical sites), depressed about body changes, or experience relationship strain. CL psychiatrists have a key role in normalizing these reactions and planning rehabilitation. Referrals to pelvic floor physical therapy (for muscle rehabilitation after pelvic surgery), to specialized sex therapists, or to plastic surgery (for reconstructive options) can be

370 useful. Educational interventions (patient brochures or information on support groups) and partner
371 participation in therapy often improve outcomes. Routine follow-up should include explicit discussion
372 of sexual health. To summarize, if surgery affecting reproductive or erogenous anatomy takes place,
373 the involvement of CL psychiatry ensures that sexual rehabilitation is part of the recovery plan.
374 **Role of CLP after Surgery:** Routine early screening for sexual dysfunction in postsurgical follow-up
375 is recommended. Psychiatrists should assess mood and communication with the partner regarding
376 sexuality. When dysfunction is identified, work with rehabilitation teams, e.g., refer men post-
377 prostatectomy to erectile rehabilitation programs, refer women post-gynecologic surgery to pelvic
378 floor therapy, and coordinate with endocrinology for timely hormone replacement (in
379 oophorectomized women or hypogonadal men). Therapeutic interventions should be targeted at body
380 image and anxiety. It is very important to teach patients about expected sexual changes and how to
381 deal with them. Table 5 gives the surgical procedure along with impact on sexual functioning. By
382 integrating these efforts, the liaison psychiatrist ensures that sexual health is restored alongside
383 physical recovery.

384 **Table 5: Surgical procedure along with impact on sexual functioning**

Surgical Procedure	Impact on Sexual Function
Radical prostatectomy (nerve-sparing or not)	High risk of erectile dysfunction; altered ejaculation/orgasm (often “dry” orgasm); psychological impact of cancer cure and possible incontinence
Hysterectomy (with/without oophorectomy)	Possible decrease in orgasmic sensation; if ovaries removed: abrupt menopause → low libido, vaginal dryness; if only uterus removed: variable effect (some women report unchanged function, others decreased sensation)
Oophorectomy (bilateral)	Immediate menopause: sexual desire often drops, lubrication decreases; vasomotor symptoms and mood changes may also reduce libido
Colorectal/Pelvic cancer surgery	Pelvic nerve injury → erectile or orgasmic dysfunction; in women dyspareunia (nerve loss, adhesions); stoma formation → body-image/psychological effects
Bariatric surgery	Generally improves sexual function (ED often resolves); weight loss improves hormonal balance; psychological boost in self-image; must monitor nutritional status for any new deficiencies

Surgical Procedure	Impact on Sexual Function
Breast cancer surgery	Mastectomy/lumpectomy: body image concerns reduce desire; nipple removal → loss of erogenous sensation; adjuvant hormonal therapy causes vaginal dryness and HSDD
Spinal surgery/injury	Depending on level: potential loss of reflexogenic erections/orgasm (higher injuries) or complete loss of genital sensation (lower injuries); pain or immobility can reduce sexual activity

Management of Sexual Dysfunction in Consultation Liaison Psychiatry

A significant proportion of patients with cardiovascular, neurological, endocrine, oncological, and major surgical conditions experience some form of sexual dysfunction. In addition, medications used for these conditions have also been implicated in impaired sexual functioning. In clinical practice, these can be a cause for discontinuation of treatment and non-compliance resulting in poor outcome of underlying systemic conditions along with negative impact on patient's quality of life.²⁰ It can also have an impact on the patient's emotional and psychosocial health. Despite this, sexual health remains among the least-screened domains in history taking and evaluation partly due to clinician and patient related barriers to discussing sexual problems openly.

The Clinical Practice Guidelines for Management of Sexual Dysfunction published in 2017 have provided a framework for assessment of sexual dysfunction.²¹ Accordingly, evaluation of any patient with sexual dysfunction requires thorough understanding about the type of sexual dysfunction, factors contributing to sexual dysfunction and factors maintaining the sexual dysfunction (Figure 3)

An integrated biopsychosocial approach is essential in managing sexual disorders that stem from medical conditions to avoid a narrow focus on performance issues and address psychological concerns as well as lifestyle factors.

General guidelines for evaluating sexual dysfunction

Emphasis is placed on a biopsychosocial, culturally sensitive approach using structured assessment tools, and liaison with allied specialties, drawing on international consensus statements (International Consultation on Sexual Medicine) and the Clinical Practice Guidelines of the Indian Psychiatric Society.

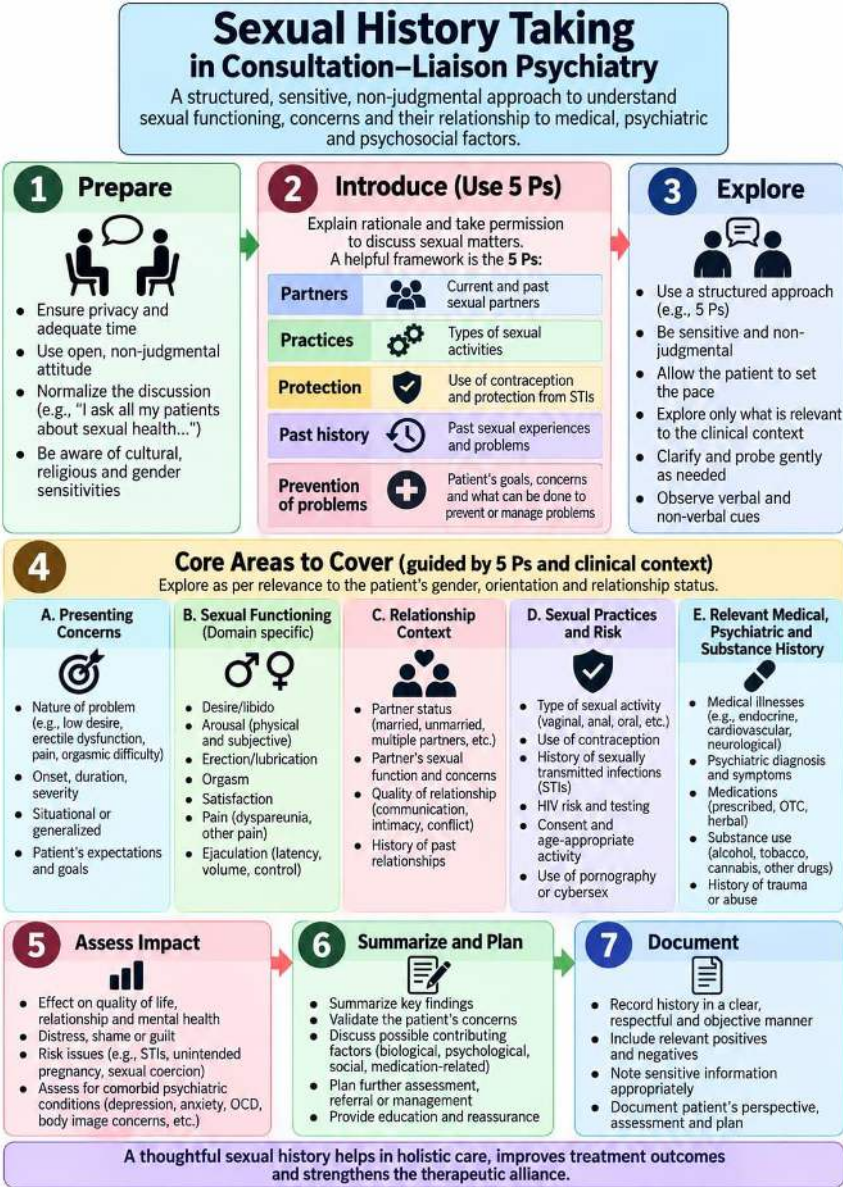


Figure 3: Sexual history taking in Consultation-Liaison Psychiatry. Source: CGPT assisted and others

The International Consultation on Sexual Medicine-5 (ICSM-5)²² provides a step wise guide for assessment of sexual dysfunctions and includes the following:

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420 **Step 1:** Detailed **Medical and Psychosexual History** to assess current medical status, duration and
421 type of sexual dysfunction and elicit underlying factors like stress, depression, anxiety, substance use,
422 relationship dynamics, and use of concomitant medication.

423 **Step 2:** Use of **Validated Questionnaires** like Arizona Sexual Experience Scale (ASEX), International
424 Index of Erectile Function (IIEF) for Erectile dysfunction and Female Sexual Function Index (FSFI)
425 for women to quantify the severity of dysfunction. The questionnaires can also be used to evaluate
426 impact of treatment.

427 **Step 3:** A focused **Physical Examination** to identify co morbid systemic disease or anatomical
428 abnormalities especially in the pelvic and genital areas.

429 **Step 4: Laboratory Testing** is highly recommended based on the history and physical examination.
430 Some examples of specific tests include fasting glucose for metabolic risk, total testosterone (including
431 free testosterone, if indicated), particularly if hypogonadism or low libido is suspected, etc.

432 **Step 5:** Complicated cases require **Specialized Testing and Referrals** including neurological, vascular
433 and endocrine consultations. A multi-disciplinary approach is usually recommended in these cases.

434

435 **Important aspects of evaluation of patients with sexual dysfunction:**

436 **Interview setting:** It may be embarrassing for both the clinician and the patient to discuss sex related
437 issues. Hence the interview must be conducted in a comfortable space ensuring privacy. Every sexual
438 history conversation requires explicit verbal consent to proceed and clarity about who else may be
439 present.

440 **Rapport Building:** Given the highly sensitive nature of the evaluation, ensuring an empathetic
441 perspective and establishing a therapeutic alliance is an important first step. Clinicians should anticipate
442 embarrassment of the patient and acknowledge this. Proper communication between patient and doctor
443 is essential for eliciting a detailed sexual history.

444 **Confidentiality:** It is important for the CL Psychiatrist to clearly decide what information will be shared
445 with the primary medical team and what will remain confidential within the psychiatric record, ensuring
446 a safe space for discussing sexual history.

447 **Non-judgemental attitude:** The clinician must maintain neutrality, establishing an environment where
448 alternative sexual practices, diverse orientations, or specific dysfunctions can be discussed without fear
449 of being judged. It is preferable to adopt an inclusive approach and align with the patient's cultural
450 understanding of intimacy and sexuality.²³

451 Preferably use the language in which the patient is comfortable. Use neutral terms and proper medical
452 terms (e.g. use penis, vagina but lips instead of labia). Use anatomical drawings to explain sexual issues
453 to the patient. If a couple has presented together take history separately from both. While examining
454 patients of opposite gender, conduct the evaluation in presence of relative/female attendant. Evaluate
455 whether the problem is just because of lack of knowledge or unrealistic explanations. Take religious
456 and cultural factors into consideration. There may be comorbid problems contributing to sexual

dysfunction (e.g. relationship difficulties ,psychiatric illness)- prioritize Rx. Assess psychological sophistication and motivation. Reassure the patient that sexual dysfunctions or adjustment problems are common and treatable. Use simple, clear and specific terms. Provide explanation for any new terms used.Start with general questions (e.g. Do you have a regular partner) and later specific questions. (e.g. Do you experience this problem when you masturbate, that is, stimulate yourself?) Avoid assumptions (e.g. sexual orientation, number of partners, sexual practices)

Reasons for Referral:

The CL Psychiatrist must clarify the exact reason for the primary clinician’s request. Some of the common reasons for referral include:

- Differentiation between organic versus psychogenic erectile dysfunction is given in table 6²⁴
- Management of severe hypersexuality or inappropriate sexual behavior
- Evaluation of severe distress following life-altering pelvic surgery
- Treatment emergent sexual dysfunction

Table 6: Differentiation between organic versus psychogenic erectile dysfunction

Feature	Organic ED	Psychogenic ED
Onset	Usually gradual and progressive	Often sudden, situational or linked to specific event.
Course	Persistent and consistent	Variable; may fluctuate with circumstances
Nocturnal/ morning erections	Often reduced or absent	Usually preserved
Erection during masturbation	May be impaired	Usually preserved
Erection with partner	Generally impaired	May be normal in some situations

Situational variation	Little variation	Marked variation depending on partner/situation
Sexual desire	May be reduced if associated with endocrine/ systemic disease.	Usually preserved though anxiety may reduce desire
Libido-erection relationship	May coexist with low libido, particularly hormonal causes	Desire is usually intact but erection fails
Erection quality	Often consistently inadequate	May be normal at times and inadequate at others
Penile rigidity	Reduced rigidity	Often adequate initially but may be lost during intercourse
Erection maintenance	Difficulty maintaining erection	Often loses erection during penetration
Performance anxiety	Usually secondary to ED	Common and often prominent
Relationship factors	May be secondary to chronic ED	Frequently associated with relationship conflict
Psychological distress	May develop as a consequence of ED	Often precedes or precipitates ED
Medical risk factors	Common: diabetes, hypertension, neurological disease	Usually absent or not sufficient to explain ED.
Medications/ substances	Antihypertensives, anti depressants, antipsychotics, substance use	May occur without a medication / substance use
Neurological signs	May be present	Usually absent
Vascular disease	May be present	Usually absent
Endocrine abnormalities	May be present	Usually absent

Physical examination	May reveal vascular, neurological, endocrine or genital abnormalities	Usually absent
Penile Doppler	May show arterial insufficiency	Usually normal
NPT (Nocturnal penile tumescence)	Often abnormal	Usually normal
Typical clinical clue	ED occurs across all sexual situations	ED occurs only in particular situations

Medical Records Review:

Prior to the clinical interview, the C-L psychiatrist must perform an exhaustive review of the patient's medical records. It is essential to study the details of associated medical conditions, surgical operative notes and the medication history chart, paying meticulous attention to recently initiated drugs. In addition, recent laboratory data (hemoglobin, HbA1c, renal function, liver enzymes) should also be reviewed to gauge systemic metabolic stability.

Detailed Sexual History Taking:

The C-L Psychiatrist must move beyond a strict biomedical paradigm and follow a systematic approach to identify the dysfunction is related to which phase of the human sexual response cycle. A comprehensive sexual history taking protocol is mentioned in table 7.

Baseline Function: Determine the patient's level of sexual desire, frequency of activity, and functional capacity prior to the onset of the current illness or surgery.

Onset and course: Identify the type of onset - acute (suggestive of surgical trauma, psychological shock, or a new medication) or insidious (suggestive of progressive vascular or neuropathic disease). Assess the course of the dysfunction and its current status.

Contextual Variability: Confirm if the dysfunction is generalised (occurring in all situations, including masturbation) or situational (occurring only with a specific partner, suggesting relationship conflict or performance anxiety).

Specific Domain Impairment: Identify the domain involved by asking specific questions about desire (libido), arousal (erection/lubrication), orgasm (premature, delayed, anorgasmia), and pain (dyspareunia, vaginismus).

Substance Use History:

A detailed substance use history is mandatory as substance use may contribute to sexual dysfunction. The history should focus on details of excessive alcohol use (leading to neuropathy and hypogonadism), illicit stimulant use (cocaine/amphetamines causing acute vasoconstriction and ED), or use of other recreational drugs and the use of androgenic steroids or PDE5 inhibitors.

Psychological factors:

Psychiatric disorders are often comorbid with medical conditions in the CL Psychiatry setting and are responsible for causing various sexual dysfunctions.²⁵

The current psychological state should be assessed with special focus on symptoms of anxiety or depression, adjustment reactions to the medical illness, psychological impact of altered body image (eg. stoma, mastectomy, etc), low self-esteem and coping skills, occupational and social stresses, socioeconomic status, and educational level. Sexual dysfunction may affect the patient’s self-esteem and coping ability, as well as his or her social relationships and occupational performance.

Partner Relationships and Assessment:

The dynamics between the patient and their partner can either facilitate recovery or perpetuate the dysfunction. It is important to assess the baseline quality of the relationship and level of emotional intimacy. Another important aspect of psychosocial evaluation is the identification of patient/couple sexual needs, fears, and treatment preferences.

Chronic or severe illness frequently forces the healthy partner into a primary caregiver role. This shift from equal partner to nurse/patient drastically alters power dynamics and often leads to loss of sexual desire.

Table 7: Comprehensive sexual history taking protocol

Domain	Key Questions
Premorbid Function	- What was the level of sexual function before? - Frequency of sexual activity, masturbation - Morning erections (men), lubrication (women)
Current Dysfunction	- Specific symptoms: libido, arousal, orgasm, pain? - When did symptoms start? - Relationship to illness/surgery/medication?

	- Situational vs. generalized?
Substance Use and Psychological Factors	- Substance: type/amount/duration - Anxiety/depression - Adjustment reactions
Partner Factors	- Partner's sexual function? - Relationship quality? - Communication about sexual issues?
Medication History	- All medications (prescription, OTC, culturally sanctioned) - Duration of use - Dose changes? - Other medications started?

525

526 **Physical Examination & Laboratory Investigations:**

527 A detailed physical examination is required to assess secondary sexual characteristics, peripheral pulses,
528 and basic neurological reflexes.

529 Relevant investigations should be undertaken including an exhaustive metabolic and endocrine panel:
530 Free and Total Testosterone, Serum Prolactin, Thyroid Function Tests (TSH, Free T4), Luteinizing
531 Hormone (LH), Follicle-Stimulating Hormone (FSH), HbA1c, and a comprehensive lipid profile.

532

533 **Validated Assessment Scales in C L Psychiatry:**

534 To aid evaluation of the subjective distress, guide assessment and monitor therapeutic progress, the
535 integration of validated psychometric scales is essential.

536 **Arizona Sexual Experience Scale (ASEX):** It is a brief 5-item scale well suited to serial bedside
537 administration and useful for tracking change in drive, arousal, lubrication/erection, ease of orgasm,
538 and orgasm satisfaction.²⁶

539 **International Index of Erectile Function (IIEF-15 / IIEF-5):** It is a multidimensional scale for
540 assessing male erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall
541 satisfaction.²⁷

542 **Female Sexual Function Index (FSFI):** It is a comprehensive 19-item self-report instrument assessing
543 key dimensions of female sexual function, including desire, arousal, lubrication, orgasm, satisfaction,
544 and pain.²⁸

545 **Changes in Sexual Functioning Questionnaire (CSFQ):** It is particularly useful in the C-L setting for
546 identifying and quantifying medication-induced sexual dysfunction.²⁹
547 Scale selection should be pragmatic - in a time-pressured setting, the brief ASEX or CSFQ is often more
548 suitable than the full IIEF-15 or FSFI for serial monitoring.

549 **Management of sexual dysfunction:**

550 Management in the CL setting should follow a biopsychosocial model with a stepped care approach.
551 The underlying or contributing medical condition should be treated appropriately as sexual dysfunction
552 often improves as the underlying illness is controlled. In addition, any co morbid psychiatric disorder,
553 when present, should be identified and treated since successful treatment of depression, anxiety or
554 psychotic illness often improves associated sexual dysfunction independent of any specific sexual
555 intervention.

556 Approach to sexual dysfunction in the CL setting can be broadly classified into general and specific
557 measures. The general measures include reassurance and sex education, lifestyle modification and
558 relaxation exercises. The specific measures include non-pharmacological measures, pharmacological
559 measures, or a combination of both.

560 Non-pharmacological, psychotherapeutic and psychoeducational interventions usually form the
561 foundation of management for most patients seen in CL practice and should generally be offered before,
562 or alongside, any specific pharmacological or device-based intervention

563 **Reassurance and Patient Education:** Reassurance that sexual dysfunction can occur with illness and
564 is often reversible helps relieve anxiety. Providing proper information may help dispel fears, unrealistic
565 expectations and misconceptions about sex resulting in improved sexual relationship.

566 **Lifestyle Modifications:** Regular exercise, healthy diet, abstinence from tobacco/alcohol or other
567 recreational drugs and weight loss can significantly improve endothelial function and have a positive
568 impact on sexual function.

569 **Relaxation exercises:** Various relaxation techniques can be taught to the patient to help deal with
570 anxiety.

571 **Non Pharmacological Measures:**

572 The PLISSIT and EX PLISSIT model: "PLISSIT" is an acronym that stands for "Permission," "Limited
573 Information," "Specific Suggestions," and "Intensive Therapy." It is a tiered approach to address sexual
574 concerns in a gradual and sensitive manner that helps to formulate interventions based on the patient's
575 needs and comfort level.³⁰

576 .

577 Healthcare professionals from all specialties can apply the PLISSIT model as follows:

- 578 1. The "P" or Permission in the model is the first stage where the health care provider literally begins
579 with asking permission of the patient to discuss their sexual health and asks open ended questions.
580 The clinician creates a safe and non-judgmental space for patients to discuss their sexual concerns.

This alleviates feelings of shame and embarrassment and helps to normalise the conversation about sex and sexuality.

2. The "LI", or "limited information" in the model represents the second stage, wherein the therapist offers basic information about sexual matters. Once the patient has identified a specific concern, targeted information is provided in a simple language to empower the client with accurate knowledge, while addressing misconceptions and myths surrounding sexual health.
3. The "SS" or the "specific suggestions" stage, involves providing tailored suggestions and guidance to address the client's sexual concerns. Some tools that might be included in this stage are mindfulness, behavioral relaxation, cognitive restructuring, intimacy enhancing skills or techniques to enhance sexual satisfaction.
4. The "IT," or "intensive therapy" stage is the final stage meant for patients with more complex sexual issues or prolonged dysfunction. This often requires specialized care with a referral made to a specialist to provide more comprehensive support and guidance. A greater emphasis may be placed on exploring relational, developmental, or cognitive processes and usually involves longer term therapy.

The EX-PLISSIT model developed by Shelley Davis and Betty Taylor in 2006, is more cyclical than linear, interactive and focusses on reflective practice.³¹ Both PLISSIT and the extended EX-PLISSIT model produce significant improvements in sexual function and in sexual/communication satisfaction compared with control conditions.³¹

Psychotherapeutic interventions:

Beyond PLISSIT, formal sex-therapy techniques including behavioural, cognitive, and psychodynamic therapies have an established evidence base. The psychological therapies for sexual dysfunctions should address the intricate biopsychosocial influences of the patient, the partner, and the couple.³² The specific non-pharmacological measures will vary according to the type of sexual dysfunction. Sensate focus, mindfulness based sex therapy, cognitive behaviour therapy (CBT), individual and couples-based interventions have been found to be beneficial.

Pharmacological measures:

The guidelines for these treatments are not much different from sexual dysfunction without a medical cause and are discussed in the specific guidelines covering the various sexual dysfunctions in this issue of the journal.

References

1. Rosenbaum M, McCarty T. The relationship of psychosomatic medicine to consultation-liaison psychiatry. *Psychosomatics* 1994 Nov-Dec;35(6):569-73.

2. Rao TS, Banerjee D, Tandon A, Sawant NS, Jha A, Manohar S, et al. Psychosexual health and sexual medicine in consultation–liaison psychiatry. *Indian J Psychiatry* 2022;64:S429-48.
3. Sathyanarayana Rao TS, Darshan MS, Tandon A. An epidemiological study of sexual disorders in south Indian rural population. *Indian J Psychiatry*. 2015 Apr-Jun;57(2):150-7. doi: 10.4103/00195545.158143.PMID: 26124520
4. Rana RK , Barnwalb RK, Sinha A, Sinha R. Prevalence of erectile dysfunction among patients with type 2 diabetes mellitus in India: a meta-analysis. *Expert review of endocrinology & metabolism* 2025;vol. 20(6): 607–614.
5. Brenk-Franz K, Häuser W, Brähler E, Schneider N, Hoy M, Strauß B. Sexual Dysfunctions and Health-Related Impairment in Patients With Chronic Disease Results of a Representative Population Survey. *Dtsch Arztebl Int* 2024 Jan 26;121(2):66–67. doi: 10.3238/arztebl.m2023.0218.
6. Trost L, Rowland D, Meston C, Kingsberg S, Briken P, Gross M, et al. Definitions, classification, and epidemiology of sexual dysfunction: a consensus statement from the Fifth International Consultation on Sexual Medicine 2024. *Sex Med Rev*. 2026;14(2):qeag028. doi:10.1093/sxmrev/qeag027.
7. Basson R, Schultz WW. Sexual Dysfunction 1 Sexual sequelae of general medical disorders. *Lancet* 2007 Feb 3;369(9559):409-24. doi: 10.1016/S0140-6736(07)60197-4.
8. Wschiansky F, Chatton D, Lalive JE, Pause C. Troubles érectiles: place de l'ensemble organique et psychologique. [Erectile dysfunction: the place of the organic and the psychologic.] *Med Hyg* 2004; 62: 591–98.
9. Basson R. Human sex response cycles. *J Sex Marital Ther* 2001; 27: 33–43.
10. Bates JN, Kohn TP, Pastuszak AW. Effect of thyroid hormone derangements on sexual function in men and women. *Sexual Medicine Reviews* 2020; 8(2):217–230. <https://doi.org/10.1016/j.sxmr.2018.09.005>
11. Hackett G, Kirby M, Edwards D, Jones TH, Wylie K, Ossei-Gerning N, et al. British Society for Sexual Medicine guidelines on adult testosterone deficiency, with statements for UK practice. *J Sex Med*. 2017;14(12):1504–1523. doi:10.1016/j.jsxm.2017.10.067.
12. Salonia A, Capogrosso P, Boeri L, Cocci A, Corona G, Dinkelman-Smit M, et al. European Association of Urology guidelines on male sexual and reproductive health:

- 2025 update on male hypogonadism, erectile dysfunction, premature ejaculation, and Peyronie's disease. *Eur Urol.* 2025;88(1):76–102. doi:10.1016/j.eururo.2025.04.0113.
13. Mosca L, Riemma G, Braga A, Frigerio M, Ruffolo A, Dominoni M, Munno G, Uccella S, Serati M, Raffone A, Salvatore S, Torella M Female sexual dysfunctions and urogynecological complaints: A narrative review. *Medicina* 2022;58(8): 981. <https://doi.org/10.3390/medicina58080981>.
14. Adedipe T. Role of partner support in psychosexual aspects of vulvar dermatoses. *Obstetrics & Gynecology Science* 2021;64(6):547–551. <https://doi.org/10.5468/ogs.21180>
15. Sousa Rodrigues Guedes T, Barbosa Otoni Gonçalves Guedes M, de Castro Santana R. et al. Sexual Dysfunction in Women with Cancer: A Systematic Review of Longitudinal Studies. *International Journal of Environmental Research and Public Health* 2022;19(19):11921. <https://doi.org/10.3390/ijerph191911921>.
16. Smith A B, Davis M, Jackson EA, et al. Sexual Function, Anxiety, Depression and Coping After Myocardial Infarction: An Exploratory Study. *Sexuality and Disability* 2021;40:77–89. <https://doi.org/10.1007/s11195-021-09715-x>
17. Yannas D, Frizza F, Vignozzi L, Corona G, Rastrelli G. Erectile dysfunction is a hallmark of cardiovascular disease: Unavoidable matter of fact or opportunity to improve men's health? *Journal of Clinical Medicine* 2021;10(10):2221. <https://doi.org/10.3390/jcm10102221>.
18. Bates JN, Kohn TP, Pastuszak AW. Effect of thyroid hormone derangements on sexual function in men and women. *Sexual Medicine Reviews* 2020; 8(2):217–230. <https://doi.org/10.1016/j.sxmr.2018.09.005>
19. Frederick NN, Lehmann V, Ahler A, et al. Psychosexual functioning in cancer survivorship: What the pediatric oncologist needs to know. *Pediatric Blood & Cancer* 2021;70(Suppl 4), e28437. <https://doi.org/10.1002/pbc.28437>.
20. Conaglen HM, Conaglen JV. Drug-induced sexual dysfunction in men and women. *Aust Prescriber.* 2013;36:42–5.
21. Avasthi A, Grover S, Rao TSS. Clinical practice guidelines for management of sexual dysfunction. *Indian J Psychiatry.* 2017;59:S91–115. doi: 10.4103/0019-5545.196977.
22. Montorsi F, Adaikan G, Becher E, Giuliano F, et al. Summary of the recommendations on sexual dysfunctions in men. *J Sex Med.* 2010 Nov;7(11):3572-88. <https://doi.org/10.1111/j.1743-6109.2010.02062>. PubMed PMID: 21040491

23. Hatzichristou D, Rosen RC, Derogatis LR, Low WY, Meuleman EJ, Sadovsky R, et al. Recommendations for the clinical evaluation of men and women with sexual dysfunction. *J Sex Med*. 2010;7(1 Pt 2):337–348. doi:10.1111/j.1743-6109.2009.01619.x
24. Pozzi E, Fallara G, Capogrosso P, Boeri L, Belladelli F, Corsini C, Costa A, Candela L, Cignoli D, Cazzaniga W, Schifano N, Ventimiglia E, d'Arma A, Montorsi F, Salonia A. Primary organic versus primary psychogenic erectile dysfunction: Findings from a real-life cross-sectional study. *Andrology* 2022 Oct;10(7):1302-1309. doi: 10.1111/andr.13212. Epub 2022 Jun 30.
25. Basson R, Rees P, Wang R, Montejo AL, Incrocci LJ. Sexual function in chronic illness. *Sex Med* 2010 Jan;7(1 Pt 2):374-88. doi: 10.1111/j.1743-6109.2009.01621.x. PMID: 20092445 .
26. McGahuey CA, Gelenberg AJ, Laukes CA, Moreno FA, Delgado PL, McKnight KM, Manber R. The Arizona Sexual Experience Scale (ASEX): reliability and validity. *J Sex Marital Ther*. 2000 Jan-Mar;26(1):25-40. doi: 10.1080/009262300278623. PMID: 10693114.
27. Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatrick J, Mishra A. The international index of erectile function (IIEF): a multidimensional scale for assessment of erectile dysfunction *Urology* 1997;Jun;49(6):822-30. doi: 10.1016/s0090-4295(97)00238-0. PMID: 9187685.
28. Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): cross-validation and development of clinical cutoff scores. *J Sex Marital Ther*. 2005 Jan-Feb;31(1):1-20. doi: 10.1080/00926230590475206. PMID: 15841702.
29. Clayton AH, McGarvey EL, Clavet GJ. The Changes in Sexual Functioning Questionnaire (CSFQ): development, reliability, and validity. *Psychopharmacol Bull*. 1997;33(4):731-45. PMID: 9493486.
30. Annon JS. The PLISSIT model: A proposed conceptual scheme for the behavioral treatment of sexual problems. *Journal of Sex Education and Therapy* 1976;2(1): 1–15.
31. Ozdemir CS, Dogan Gangal A, Senturk Erenel A. The Effect of Sexual Counseling Based on PLISSIT and EX-PLISSIT Models on Sexual Function, Satisfaction, and Quality of Life: A Systematic Review and Meta-Analysis. *Arch Sex Behav*. 2024 Oct;53(9):3485-3513. doi: 10.1007/s10508-024-02898-2. Epub 2024 Jun 18. PMID: 38890226; PMCID: PMC11390780.

32. McCabe M, Althof SE, Assalian P, Chevret-Measson M, Leiblum SR, Simonelli C, Wylie K. Psychological and interpersonal dimensions of sexual function and dysfunction. *J Sex Med.* 2010 Jan;7(1 Pt 2):327-36. doi: 10.1111/j.1743-6109.2009.01618.x. PMID: 20092442.

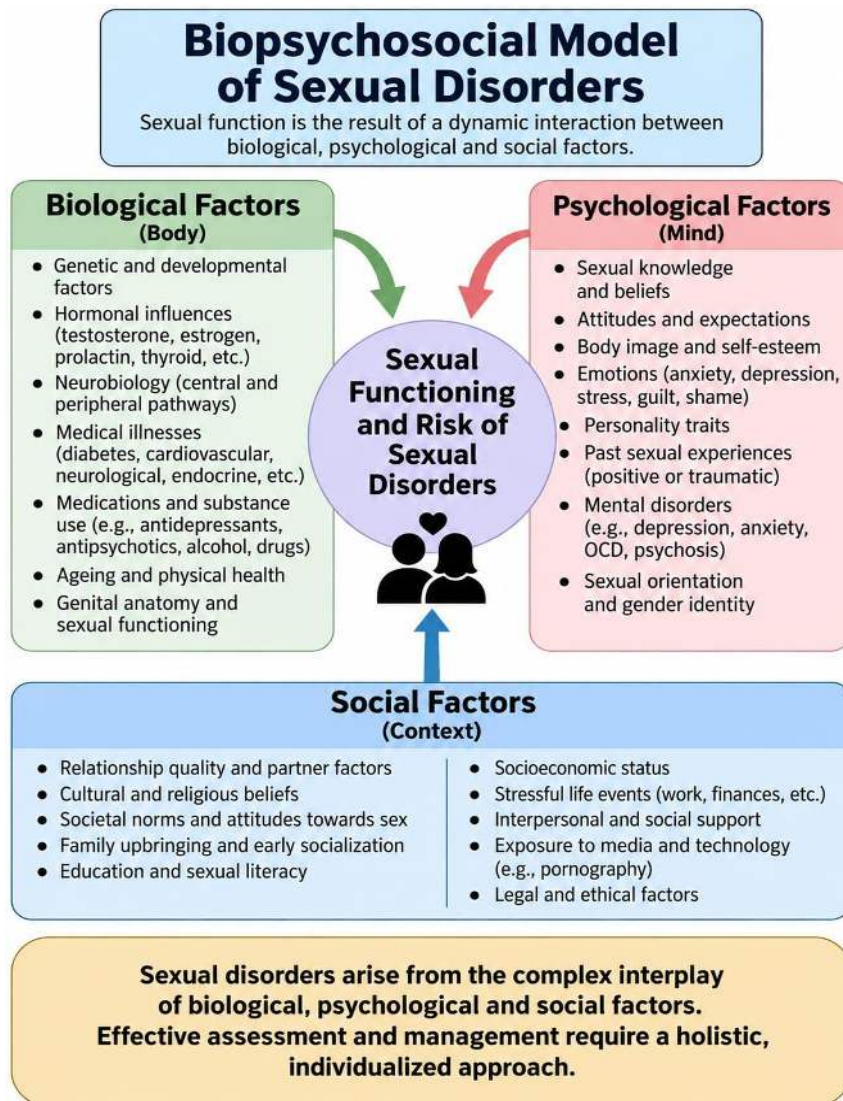


Figure 1: The biopsychosocial model of sexual disorders (Source: CGPT assisted and other references)

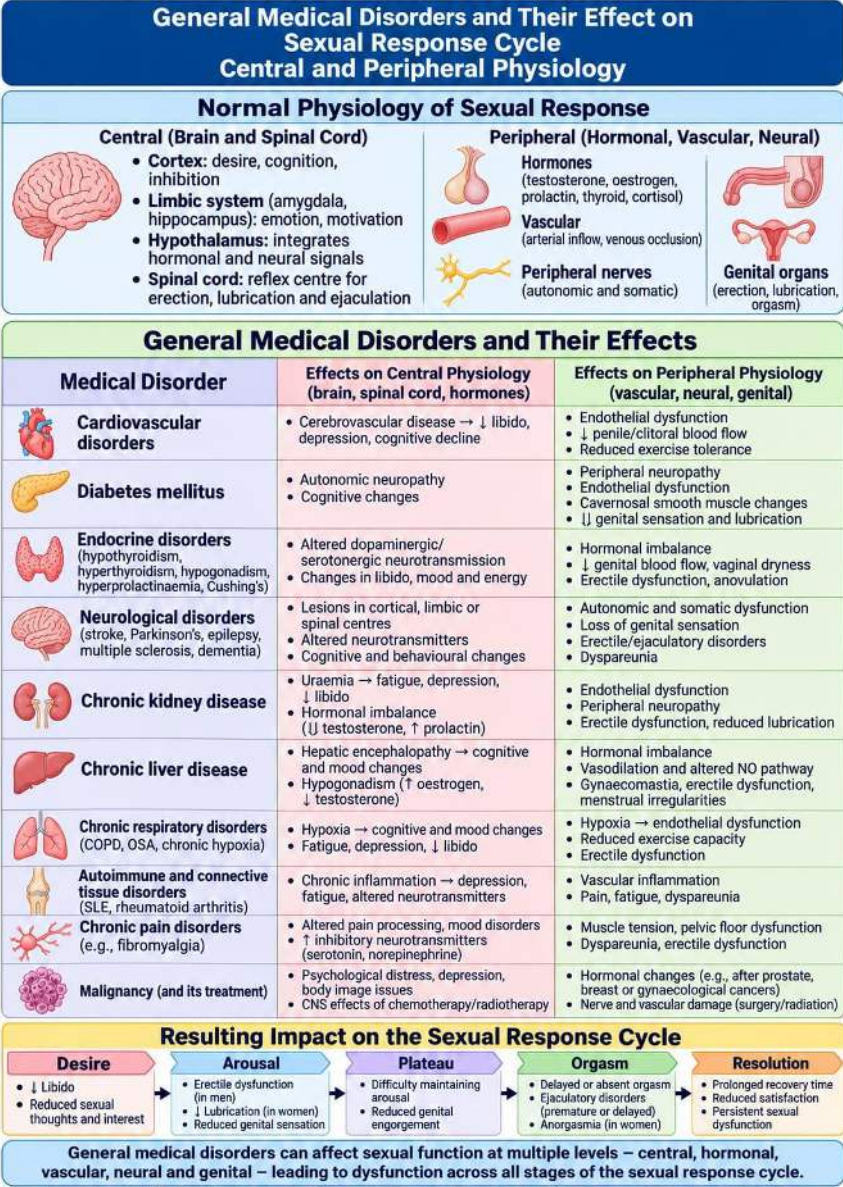


Figure 2: General medical disorders and their effect on sexual response cycle. Source: CGPT assisted and other references

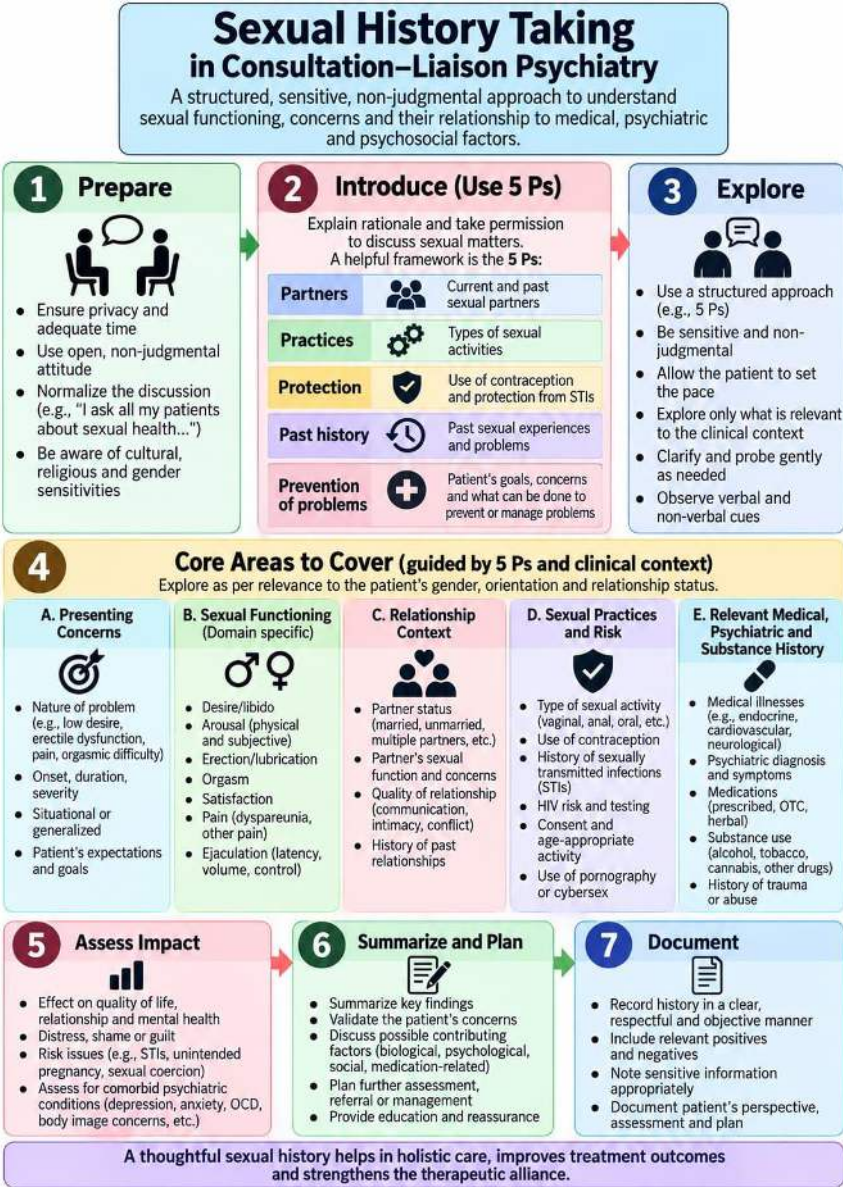


Figure 3: Source: CGPT assisted and others

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