



Review Article

Investigating male sexual dysfunction

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Abstract

Sexual dysfunction occurs commonly in men of reproductive age. Male sexual dysfunction may include low libido, erectile dysfunction, premature ejaculation, and other issues. The types of sexual dysfunction reported commonly are lack of sexual satisfaction and hypoactive sexual desire; its prevalence ranges from 8.9% to 68.7%. Multiple aetiologies like medical illnesses such as infections, hepatic, renal, or pulmonary diseases, endocrinal diseases (hormonal imbalance), nutritional, genetic, neurological, surgical, or vascular causes, and chronic substance use can lead to significant sexual dysfunction in males. Males with sexual dysfunction can experience a heavy psychological burden. A detailed psychopathological history and evaluation with the help of standardized rating scales, physical examination, and laboratory-based evaluation can help diagnose sexual dysfunction. Multi-disciplinary approach with the help of various specialties like neurology, urology, radiology, endocrinology, and psychiatry is needed to establish a proper diagnosis and initiate an early intervention for treating sexual dysfunction in males.

Keywords:

Males, Diagnosis, Sexual dysfunction, Psychological

Introduction

Male sexuality is a complex entity involving various aspects of sexual functioning like desire, libido, pleasure, intercourse, erection, ejaculation, orgasm, and relationship satisfaction. Low libido, erectile dysfunction, premature ejaculation, and

other difficulties in men can all contribute to sexual dysfunction. Lack of sexual satisfaction and hypoactive sexual desire are the most commonly reported forms of sexual dysfunction, with incidence ranging from 8.9% to 68.7% (Lotti and Maggi, 2018).

Literature highlights that males are more likely than females to present with and be attended to for treating sexual problems. However, it is a simultaneous observation that males usually find these problems difficult to discuss across various cultures and ethnicities. This hesitance can considerably delay disclosure or prevent them from seeking further help. It is essential to spend time with patients to establish the diagnostic work-up of the problem as clearly as possible to lead to more effective treatment (Gregoire, 2000).

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Investigation of male sexual dysfunction demands teamwork comprising of a psychiatrist, urologist, physician, and endocrinologist.

Assessment of male sexual dysfunction shall observe the following headings:

- A. History
- B. Scale-based assessment
- C. Physical examination
- D. Physiological tests
- E. Evaluation of co-morbid medical/neurological/ surgical conditions
- F. Evaluation of substance use or medication-induced sexual dysfunction

A. History: Detailed medical, psychological and sexual history is crucial in finding males' underlying cause of sexual dysfunction.

1. Medical history - Patients should be assessed thoroughly to rule out any medical causes leading to sexual dysfunction in males. History of chronic medical, endocrinal, and surgical illness shall be asked for, which may contribute to the sexual dysfunction.

To rule out a neurological disease, the temporal connection between the development of the sexual dysfunction and that of the neurological disorder shall be questioned.

Developmentally, if patients have hypogonadism, they should be assessed for positive family history of the disease, deviation of adolescent growth from normality, recent changes in secondary sexual characteristics, symptoms of pituitary dysfunction, history of testicular inflammation, any trauma to the testicles, infertility, or exposure to radiation or cytotoxic agents (Kandeel et al., 2001).

2. Psychosocial history- Several men experience their health care professionals as non-approachable enough to talk about their sexual issues (Sinkovic and Towler, 2019; Marwick, 1999). Furthermore, shame and embarrassment may create barriers to discussing the topic, with

research showing that less than 50% of men talk about erectile dysfunction with their doctor. Hence it is important to open up the topic for discussion in every case.

Relationship history should focus on asking for marital discords, unstable interpersonal relationships with partners, and infidelity. In individual assessment, questions to be asked about traumatic early sexual experiences, impaired self-esteem, and history of depression or anxiety related to performance during sexual acts with a partner.

It is also important to evaluate the 'couple' when managing sexual difficulty in any partner. The partner may be the first person to identify the problem when men tend to ignore or suppress the problem, even if distressed (Rosen et al., 2006; Jiann et al., 2013; Fisher et al., 2005). The partner may play a motivating role in the partner's treatment.

3. Sexual history - Detailed history mentioning onset, duration, progress, severity, frequency, and associated precipitating or exacerbating factors related to the patient's current problem should be evaluated. It is mandatory to ask for privacy available for the sexual act, compatibility between the sexual expectations and the partners, use of any self-stimulation techniques the guilt associated with masturbation, use of sex- toys, or use of pornography for sexual pleasure. Also, the misconceptions about the normal physiology of sex shall be explored to understand the origin of common sexual complaints like 'night fall' or passage of 'Dhat'.

A detailed history can lead a clinician toward the probable etiology of sexual dysfunction. For example, decreased libido shall probably generate three differentials: endocrine disease, mood disorder, or relationship conflict. When the patient gives a history of recurrent strong erections under any erotogenic situations (during foreplay, fantasy, or masturbation, with another partner, or upon awakening), it indicates that the endocrine, vascular, and neurological systems are probably intact and that the most likely aetiology is a psychogenic stressor. Conversely, a history indicating the presence of decreased penile

rigidity in non-coital activities is highly indicative of an organic aetiology (Kandeel et al., 2001).

B. Scale-based assessment

Several standardized scales are available to evaluate dysfunction in various stages of the sexual cycle. This can add a better symptom explanation if the patient cannot talk it out. Commonly used scales include:

Arizona Sexual Experience Scale (ASEX): It is a short, self-report Likert scale which assesses five aspects of sexual dysfunction: drive, arousal, penile erection/vaginal lubrication, ability to achieve orgasm, and satisfaction from orgasm (Mc Gahuey et al., 2000).

Changes in Sexual Functioning Questionnaire: Comprise of items common and specific to males and females. This scale also addresses five dimensions viz pleasure, desire/frequency, desire/interest, arousal, and orgasm on the 5-point Likert scale (Clayton et al., 1997).

Sex Effects Scale: It is a gender-specific brief 13-item scale designed to assess changes in three domains: desire, arousal, and orgasm (Kennedy et al., 2006).

C. Physical examination

A detailed history of medical/ surgical/ neurological illness and corresponding general and systemic physical examination can help point toward the underlying pathology of sexual dysfunction. For example, if the patient has diabetes, he should be assessed for peripheral and autonomic neuropathies and micro-and macrovascular complications.

Genital area examination can help identify the external structural abnormality or any evidence of trauma. Patients with Klinefelter's syndrome usually have gonadotropin deficiency exhibiting a decrease in testicular volume (infantile testis).

The neurological examination shall focus on the loss of sphincter tone, changes in deep tendon reflexes, decrease in pinprick or light touch sensations, or presence of motor deficits,

particularly in the genital area. The bulbo-cavernosus reflex should also be evaluated for evoked contractions of the external anal sphincter.

D. Physiological tests

A laboratory evaluation may be an important tool to evaluate the aetiology of sexual dysfunction. Various physiological investigations like Penile plethysmograph or Doppler ultrasound and nocturnal penile tumescence monitoring can help differentiate psychogenic erectile dysfunction from organic causes.

Lab tests recommended in evaluation for Erectile Dysfunction

- Blood sugar levels,
- Liver function tests,
- Thyroid function tests,
- Lipid profile,
- Hormonal tests like free testosterone, testosterone, SHBG (Sex hormone-binding globulin), PRL (Prolactin), LH (Luteinizing hormone), FSH (Follicle-stimulating hormone), etc.

Measurement of reproductive hormones can add to the diagnostic value when a patient presents with decreased sexual desire, diminished secondary sexual characters, developmental abnormalities, history of testicular inflammation (orchitis) or exposure to toxins, loss of smell, headache, disturbed vision, and, or patients with physical signs consistent with hypogonadism or androgen resistance, reduced size or abnormal consistency of testicles.

Patients with primary hypogonadism (orchitis or exposure to radiation or toxins) will have high levels of luteinizing hormone and low concentrations of bio available testosterone. Patients with hypo plastic genitalia, lack of secondary sexual characteristics, and/or gynecomastia and feminization (signs of androgen resistance) will have elevation in both luteinizing hormone and total (or bioavailable) testosterone.

Patients with advanced age, obesity, or reduced testosterone binding carrying proteins (signs of secondary hypogonadism) may have low serum concentrations of LH and total testosterone.

Serum Prolactin concentration can help differentiate between hyperprolactinemia (high serum prolactin levels) and other disorders of the hypothalamic-pituitary axis in which prolactin is normal or low. However, both testosterone and LH are usually below their respective normal ranges. Excess prolactin concentration (100 ng/ml) is frequently associated with prolactin-producing adenomas, whereas lower prolactin concentrations may be seen in idiopathic or drug-induced hyperprolactinemia. Other conditions of secondary hypogonadism may have average or low concentrations of serum prolactin.

E. Male erectile disorder due to a general medical condition

Around 15 to 75 percent of males have an organic basis for the erectile disorder (Ludwig and Phillips, 2014). Physiologically, the male erectile disorder can be due to various medical conditions listed in the table 1.

F. Substance/medication-induced sexual dysfunction

Substances such as alcohol, cocaine, amphetamines, opioids, sedatives, and other unknown substances, when abused, may lead to significant changes in sexual functioning (Zaazaa et al., 2013). Symptoms may occur under substance withdrawal or intoxication. Initially, when used in small doses, some substances may increase sexual performance by enhancing mood and decreasing anxiety, but continued and regular use may lead to decreased sexual desire, impairment in ejaculation, and impaired performance.

Stimulants such as amphetamines may initially lead to enhanced sexual activity but may cause erectile dysfunction and delayed ejaculation with long-term use.

Alcohol is a Central Nervous System (CNS) depressant that acts by increasing the level of GABA (gamma-aminobutyric acid) inhibitory

neurotransmitter. Alcohol inhibits behavioural control and thus potentiates sexual desire. Short-term use of alcohol can act as an anxiolytic and play an essential role in people whose anxiety leads to reduced sexual function. Alcohol also affects people's sexual function through hormonal effects. Alcohol use has been associated with a reduction in testosterone levels in men. In addition, chronic alcohol consumption negatively impacts the liver's structure and affects liver function and protein production. The reduction of body proteins decreases the sexual function of both sexes; it diminishes the ability of the liver to metabolize estrogenic compounds, and especially in males, it can lead to loss of male characteristics and appearance of female parts (testicular atrophy and enlargement of the breasts).

The abuse of opiates and opioids nearly always depresses desire, although occasional users may experience sexual enhancement probably due to a change in consciousness. Opioid use such as heroin leads to erectile failure and decreased libido in men. Prolonged cannabis use reduces testosterone levels. Hallucinogens like phencyclidine (PCP) and lysergic acid diethylamide (LSD) cause anxiety, delirium, and psychosis, interfering with normal sexual functioning (Zaazaa et al., 2013).

Various medications can also lead to sexual dysfunction. Literature observes that subjects with schizophrenia have significantly higher rates of sexual dysfunction than healthy controls and patients with other psychiatric disorders. Strong evidence suggests that both typical and atypical antipsychotic drugs significantly impair sexual function at various stages of the sexual cycle (Torre et al., 2013).

Antidepressant-like SSRIs (selective serotonin reuptake inhibitors) and SNRIs (selective norepinephrine reuptake inhibitors) lead to lower sex drive and cause a delay in orgasm. Tricyclic antidepressants (TCAs) interfere with the erection of the penis and ejaculation due to their anticholinergic effects. Monoamine inhibitors (MAOIs) cause impaired erection and delayed or retrograde ejaculation (Bella and Shamloul, 2013).

Table 1: Diseases and other medical conditions implicated in erectile dysfunction (Sadock et al., 2017)

Infectious and parasitic diseases	Filariasis Mumps
Cardiovascular diseases	Atherosclerotic diseases Aortic aneurysm Cardiac failure Leriche syndrome
Renal and urological disorders	Peyronie disease Chronic Kidney Disorders Hydrocele and varicocele
Hepatic disorders	Cirrhosis and Liver cell failure, usually in patients with alcoholic liver disease
Pulmonary disorders	Respiratory failure
Genetic disorders	Klinefelter syndrome Congenital penile abnormalities
Nutritional disorders	Vitamin deficiencies Poor nutrition
Endocrine disorders	Thyroid dysfunction (Myxedema Hyperthyroidism) Diabetes mellitus Dysfunction of the pituitary -adrenal-testis axis, including Addison disease, Adrenal neoplasia Acromegaly Chromophobe adenoma
Neurological disorders	Degenerative disorders (Parkinson's disease, Multiple sclerosis, Amyotrophic lateral sclerosis) Temporal lobe epilepsy Traumatic and neoplastic spinal cord diseases , Transverse myelitis Central nervous system tumour Peripheral neuropathy General paresis, Tabes dorsalis
Poisoning	Lead (plumbism) Herbicides
Surgical procedures	Perineal prostatectomy, cystectomy Aortoiliac surgery Sympathectomy (frequently interferes with ejaculation) Retroperitoneal lymphadenectomy Abdominal-perineal colon resection
Vascular disorders	Focal arterial occlusion disease Subclinical endothelial dysfunction

Mood stabilizers have also been observed to have a causal association with sexual dysfunction. Lithium is observed to cause erectile dysfunction. Significant rates of sexual dysfunction also are

reported related to the use of anti-epileptic drugs like valproate and carbamazepine (Georgiadis et al., 2006).

Conclusion

Sexual dysfunction is common in men, although associated with much hesitance to seek help. Psychological stress and physical illness can both contribute to sexual dysfunction in males. Investigating male sexual dysfunction requires teamwork involving expertise from urology, neurology, radiology, endocrinology, and psychiatry.

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