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The picture 'Tenderfoot love' (2022)
used in the front cover page
is the original work of

Deblina Roy,

a psychiatric nurse, a hobby painter.

This picture symbolizes male sexual dysfunction depicting
the broken step of the ladder.

We acknowledge her contribution.

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Editorial

Male sexual dysfunction: A vast area that needs more exploration and action

Swapnajeet Sahoo

Assistant Professor, Department of Psychiatry, Post Graduate Institute of Medical Education and Research, Chandigarh, India.

Since the advent of nature, males have been regarded as the primary source of increasing the progeny of their generation. In this process, males suffer from a substantial internal pressure of performance and societal pressure to perform well regarding sexual activity. Females have always been considered passive recipients of sexual activity. However, with changing times, these viewpoints have been grossly changed. Both males and females should be active participants in enduring sexual activity, as it gives sexual pleasure and satisfaction to both partners (Addis and Mahalik, 2003).

In this regard, males and females can suffer from sexual dysfunctions. The prevalence of male sexual dysfunction (MSD) is more reported when compared to female sexual dysfunction, mostly because of the stigma attached to discussing openly sexual issues in females with any specialist unless asked. Society, media, and peer groups play a significant role in fixing the mind set of the males that they have to be sexually active with more stamina to last long with any female (Sullivan et al., 2015). Usually, it is said that masculinity is more if the stamina and performance of a male are more. There are several myths about masculinity (as mentioned in Box 1).

Box 1: Myths regarding masculinity

1. A man's toughness is linked with his physical strength.
2. A man should be able to defend himself by fighting using physical force.
3. Males should take risks and should not engage in weak activities.
4. A male should be the sole or primary contributor to the family's finances.
5. Male should experience feelings of superiority over females.
6. Men who do not engage in certain behaviours (like excessive drinking, smoking, flirting, having multiple sexual affairs, etc.) are deemed feminine or non-masculine.
7. A male should always be ready for sex any time of the day and eager to acquire another sexual conquest.
8. The male should control the sexual activity and overpower the female partner.
9. Male should last long in bed, or else he is impotent.
10. Once failure in achieving erection means the male is impotent.

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Some myths become the basis of sexual dysfunctions in males, primarily psychogenic erectile dysfunction, performance anxiety, masturbation-related myths, dhat syndrome, and premature ejaculation (Fleming et al., 2014; Rösing et al., 2009). MSDs are had been included in the International Classification of Diseases (ICD system) and Diagnostic and Statistical Manual of Mental Disorders (DSM system). Over the years, there has been more acceptance

and recognition of MSDs worldwide. There are specialties dealing with MSDs specifically (such as sexual medicine, urologists, psychiatrists, and psychologists), and there are certificate courses and fellowships for sexual medicine.

In the current issue of this journal, the unique

theme of MSDs was chosen, and ten articles highlighting many aspects of MSDs have been discussed in great detail. Box 2 highlights the main key findings of the articles in this issue on MSDs, irrespective of the sequence of articles in the journal.

Overall, this issue can be considered a resource

Box 2: Highlights of this issue on MSDs

1. A detailed assessment should be done using a comprehensive Dhat syndrome checklist questionnaire that must include clinical features and beliefs held by the patient and his peers/relatives/society. The assessment helps carrying out focussed tailor-made psycho-education and cognitive behaviour therapy for patients with Dhat syndrome.
2. MSDs have co-morbid psychiatric disorders (anxiety, depression, substance use, etc.) and physical disorders (Hypertension, diabetes, cardiovascular disorders, etc.). Treatment of underlying co-morbid conditions is often the mainstay of treating MSDs, along with mediations and surgical implants as per the case.
3. Classification of Premature ejaculation (PE) and differences between lifelong, acquired variable and subjective PE.
4. Penile Dysmorphic Disorder (PDD) is having persistent preoccupation about having a small penis, leading to repeated checking behaviour and significant distress/impairment. Psychosexual psychotherapy with adequate psycho-education can be beneficial for patients with PDD.
5. Delusional disorders such as pathological/morbid jealousy have been linked with MSDs, which need careful history taking, assessment for alcohol dependence, drug abuse, intake of any medications, etc. Patients with MSDs and pathological jealousy can be at risk of self-harm or harm to their female partner and hence, needs appropriate pharmacological measures and treatment.
6. Non-pharmacological interventions for treating MSDs should be the cornerstone of the treatment of MSDs of psychological nature. Therapies such as couple sex therapy, mindfulness-based therapies, directed masturbation, kegel exercises, and lifestyle changes are some important non-pharmacological interventions with proven efficacy.
7. Regular yoga practice helps to maintain health and wellbeing. About nine main types of Yoga therapies have been discussed for managing MSDs.
8. Available policies across the globe on MSDs are from the American Urological Association and the American Academy of the Family Physicians; no such policies on sexual dysfunction in India yet exist.
9. Nurses' perspectives should be taken care of while teaching the nursing students how to take a sexual history as part of their clinical duties. It should be included in their standard nursing curriculum with practical clinic-based teaching by the supervisors/faculties. In addition, nurses need to be imparted education in sexuality and communication skills so that the knowledge learned can be put into practice.
10. Patients with erectile dysfunction need judicious investigations to rule out possible physical disorders that may attribute to erectile dysfunction. It helps the clinician in planning the management.

material on MSDs with various clinical aspects for practicing clinicians and young scholars. These articles also highlight the fact that although the area of MSDs has been well-explored, there are limited pharmacological measures and fewer numbers of specialists dealing with non-pharmacological interventions. There is limited literature on clinical practice guidelines across the world. Indian Psychiatric Society has recently published clinical practice guidelines for treating MSDs, and it can also be regarded as a document for training and learning (Avasthi et al., 2017).

However, considering the prevalence of MSDs in the general population, there is a need for a wake-up call for clinicians and researchers to take up active and collaborative efforts to improve the outcomes of patients with MSDs.

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Review Article

Male sexual dysfunctions: A clinical review

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Male sexual dysfunction, Erectile dysfunction, Premature ejaculation, Dhat syndrome.

Abstract

Sexuality and sexual dysfunction have been described in various world literature since ancient times. With time advances, science and socio-cultural changes have evolved our understanding of sexuality and sexual disorders. Male sexual dysfunction is more commonly reported than female sexual dysfunction because of shyness, socio-cultural practices, and various associated stigma with sexual disorders. Male sexual disorders are a group of heterogeneous disorders involving multiple systems. Male sexual disorders have psychogenic as well as biogenic in origin. Commonly reported male sexual disorders are erectile dysfunctions, premature ejaculations, Dhat syndrome, and delayed ejaculations. The review focuses on highlighting the burden of illness and enhancing the understanding and approach to male sexual disorders. The review also highlights the available treatment options and appropriate referral services to address the problems adequately.

Introduction

The evidence for male sexual dysfunction (MSD) disorder is evident in ancient literature worldwide. In almost every civilization, MSD was well documented (Forth, 2008). According to the current classification system in ICD-11, the sexual disorder is classified under the section of sexual dysfunction & in DSM-5 under the chapter of sexual dysfunctions (APA, 2013).

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The worldwide prevalence of sexual dysfunction is 43% in women and 31% in men (Rosen, 2000). Similarly, in India, the burden of SD is 14% in females and 21% in males (Rao, 2015). Medical services available in India to manage SD are limited as well as the stigma and shyness associated with MSD hinder individuals from seeking medical help for various MSD. Worldwide premature ejaculations (PE) are the most common MSD. In Indian literature, the prevalence of erectile dysfunction at 15.77%, male hypoactive sexual desire disorder (HSDD) at 2.56%, and premature ejaculation at 8.76% was reported (Rao, 2015). This review discusses the common prevalent MSD, representing more than 90% of the entire MSD.

The advancement in the classification of disease, a better understanding of male sexual dysfunction in the purview of current scientific knowledge,

and changes in cultural practices and social values impact the approach and management of male sexual disorders. This review emphasizes the approach to MSD and its treatment in the current scenario.

1. Erectile dysfunction (difficulty in getting/keeping an erection): Erectile dysfunctions (ED) are described as difficulty in developing or maintaining an erection suitable for satisfactory intercourse (Muneer, 2014). In ICD-10 classification, erectile dysfunctions are classified as the failure of genital response (F.52.2) (WHO, 1993). In epidemiological studies, the prevalence of erectile dysfunction is 52% in the age group of 40-70 years.

ED has a multifactorial etiology and is associated with various risk factors. Increasing age is one of the important risk factors for ED (Feldman, 1994). The psychogenic factor was considered the primary cause of ED, but in the current scenario, most ED cases have organic etiology with co-morbid psychological factors for ED (Yafi, 2016). In routine clinical practices, subjects attending the sex clinic for ED have belonged to the 30 to 40 years of age with moderate to severe ED. In most of the cases, they also have medical comorbidities (e.g., Diabetes, Hypertension), psychiatric comorbidities (e.g., Depression, Substance use disorders), and other co-morbid sexual disorders (Table 1) (Tripathi, 2021). ED also indicates endothelial dysfunction and is often preceded before cardiac events, so it can be considered an early marker to identify the risk of cardiac events (Rao, 2015).

The approach to ED's case focused on assessing the cause, severity, co-morbid conditions, and management of ED. Initial assessment of ED started with focused history taking, including onset, course, and duration of symptom onset (Miller, 2000). Psychogenic ED is presented with sudden onset, situational, presence of nocturnal penile tumescence, and good response to phosphodiesterase-5 inhibitor. Most organic ED started with gradual onset and progressive, better erection in standing than lying down positions (Yafi et al., 2016). Evaluation and assessment of other co-morbid sexual disorders, mental health evaluation, and assessment of lower urinary tract

symptoms (LUTS) are integral part of history-taking (Rosen, 2003). International Index of Erectile Function (IIEF-5) questionnaire is commonly used. IIEF-5 is a five-point Likert scale ranging from 5 to 25. IIEF score of 1-7 indicating severe, 8-11 moderate, 12-16 mild-moderate, 17-21 mild, and 22-25 no erectile dysfunction (Rosen, 1999). Evaluation of vascular risk factors for cardiac events and arteriovenous malformation in ED is also important. Laboratory tests include blood sugar, lipid profile, thyroid profile, serum testosterone, prolactin, and penile color Doppler. Nocturnal Penile Tumescence Rigidity (NPTR) Tests, penile electromyography, cavernography, and assessment of structural abnormality with USG are additional investigations in the assessments of ED (WHO, 1993). Detailed assessment of ED revealed the type, severity, and cause of ED with associated comorbidity (Awasthi, 2017).

The oral PDE-5 inhibitor, testosterone supplement, and intra-urethral and intracavernosal injections of prostaglandin E (alprostadil) are commonly available treatment options for ED. External vacuum device, penile prosthesis, penile revascularization surgery, and venous ligation surgery are also used as a treatment option for ED (Sooriyamoorthy, 2022).

2. Premature ejaculation (reaching orgasm too quickly): Premature ejaculation (PE) is the most common sexual dysfunction in males. Worldwide, 30% of males reported PE across all age groups (Montorsi, 2005). PE is defined as a condition of short ejaculation that occurs sooner than desired (intravaginal ejaculatory latency time (IELT) is less than 3 min), either before or shortly after penetration and one or both partners experience distress (Montague, 2004). PE is a self-reported problem and in most cases, it depends upon the subject's expectations and beliefs about the sexual acts. A person who has a reasonably good time for ejaculation still reported PE due to unrealistic expectations of ejaculatory time during sexual activities.

PE is classified as lifelong PE (LPE), acquired PE (APE), variable and subjective PE (Table 2) (Waldinger, 2006). Genetic and neurological etiology are behind most primary PE, but it can

be triggered by psychological impulses like the traumatic sexual experiences before puberty, conditioning, and rearing. Diabetes, hypertension, hyperthyroidism, substance use disorder, medications, a psychological issue like performance anxiety, depression, stress, and poor sleep are the common etiological factors behind the acquired PE (Raveendran, 2021).

PE hampered the sexual satisfaction between couples, which led to low self-esteem and confidence among males, further aggravating the PE due to anxiety. PE is a self-reported condition, but people usually take a long time to consult with a physician due to shame or low confidence and start with self-medication or herbal preparation to manage it.

The advancement of sexual medicine enhanced the understanding of PE, and now PE is considered not a purely psychological disorder but also has an underlying organic basis too. Understanding the pathophysiology of ejaculation is essential to understanding the approach and management of PE (Table 3) (Martin et al., 2017). The lumbo-sacral spinal cord and cerebral and spinal areas are interconnected to regulate ejaculations. Under the neuronal control of pelvic floor muscle rhythmic contraction, the bladder and urethra muscles function in a coordinated manner during the ejaculations and prevent retrograde ejaculation of sperm in the bladder. The central and spinal neuronal impulses integrated and coordinated by the spinal ejaculatory generator work during ejaculation. Serotonin, dopamine, and acetylcholine are important neurotransmitters during ejaculations. An increase in postsynaptic serotonergic activities increases the ejaculatory latency. Post-synoptically lower concentration of serotonin or hyposensitivity of serotonin receptor leads to PE, and medicines that increase the level of serotonin are useful in the treatment of PE. Disorder affected the pelvic floor muscle, e.g., erectile dysfunction also affects the ejaculations (Raveendran, 2021).

Assessment and management of PE case started with a detailed history to establish the diagnosis, estimation of IELT, ejaculatory control, type of PE, severity, and medical, psychological,

substance/medication history (Chung, 2015). Evaluation of other co-morbid sexual disorders and genitourinary problems is also needed. Most of the time, the examination of PE subjects are unremarkable but still detailed neurological examination, spinal cord assessment, lower abdomen, and genitourinary system examination is a crucial part of PE evaluation. Primary PE (LPE) is managed with pharmacotherapy (selective serotonin reuptake inhibitors, tricyclic antidepressant Trazodone, etc.), behavioral therapy, and psychotherapy, in secondary PE (APE) primarily focus on the management of comorbidities, precipitating, and maintaining factor for PE followed by behavioral therapy and pharmacotherapeutic approach is considered. Variable and subjective PE is not considered pathological but they are considered variants of the normal ejaculatory process and managed with psycho-education, reassurance, and behavioral therapy (Pereira-Lourenco, 2019).

SSRI is commonly used as an off-label medication for PE. TCA is also used as off-label in PE, and the most commonly used TCA is clomipramine. Dapoxetine, tramadol, and PDE-5i, the topical local anesthetic agents, are also used for PE.

Behavioral therapy approach included the stop-start technique by H. Semans and the squeeze technique by Masters and Johnson. Pre-coital masturbation, use of a condom, and local anesthetic cream over the glans are some techniques used for sensory abstractions to manage the PE.

3. Delayed or inhibited ejaculation (reaching orgasm too slowly or not at all): Delayed ejaculation (DE) is a less common form of the male sexual disorder (MSD). Population-based epidemiologic studies reported that the prevalence is 1-4% (Chen, 2016). Aging, pro-erectile medication use, and over-diagnosis of erectile dysfunction lead to an increasing prevalence of DE (Perelman, 2011). DE is classified in DSM-5 in sexual dysfunction and defined as a marked delay in ejaculation and marked infrequency or absence of ejaculation on almost all the occasions for 6 months during partnered sexual activity and without the

individual desiring delay (APA, 2013). Intravaginal ejaculation latency time (IELT) between 4 to 10 min is considered a normal ejaculatory time during sexual activities, so more than 10 min IELT is the objective measurement of DE.

Etiopathology of DE is associated with psychosocial and biological factors. Ailment such as insufficient sexual stimulation (mental and physical), preferences for unusual methods of masturbation, and conflicts between sexual partners is considered psychosocial factors (Abdel-Hamid, 2018). On the other hand, biological factors included aging, neurological disorders, genitourinary tract disorders, anatomical malformations in pelvic floor muscles, hormonal disturbance, and use of psychotropic medications (Corona, 2011).

No confirmatory test is available to establish the diagnosis of DE, detailed sexual history and focused history for DE, physical examination including detailed neurological and genitourinary examination is included for assessments of DE. The investigation included in DE are lower abdomen ultrasonography, first void of urine after masturbation to assess retrograde ejaculations, assessment of vas deference patency, lower urinary tract patency, PSA, urine routine, and microscopic examination, hormonal test, and investigation focused on comorbidities (Abdel-Hamid, 2018). Currently, no drug is approved for DE, but bupropion and cabergoline are commonly used off label drugs for DE (Abdel-Hamid, 2016).

4. Low libido (reduced interest in sex):

Decreased interest in sexual activities is classified in ICD-10 under the lack or loss of sexual interest disorder (F.52.0) and in DSM-5 classified as Male Hypoactive Sexual Desire Disorder (MHSDD) (APA, 2013). Low sexual desire and distress is the key feature of MHSDD. In India, limited epidemiological studies are on MHSDD, but the prevalence of MHSDD worldwide is estimated to be 15% (Rosen, 2000). Sexual desire consists of sexual drive, sexual motivation, and sexual wishes. Sexual drive is regulated by the hypothalamus, the preoptic area of the anteromedial hypothalamus (Montgomery,

2008). Drive is also influenced by hormones, especially testosterone, and neurotransmitters, mainly dopamine. Other neurochemicals, prolactin, melanocortin, and serotonin, are also linked with sexual desire. Pathogenesis of MHSDD is multifactorial; androgen deficiency, medications (antihypertensive, psychotropic, anti androgens, etc.), chronic systemic disease (diabetes, cancers, hypothyroidism, Addison's disease, HIV, coronary artery disease, strokes, etc.), substance use disorders, other sexual disorders, depression, anxiety, conflicts between sexual partners, a relationship issue, adjustment disorders, are important factors to contribute pathogenesis of MHSDD (Abdallah, 2007).

Evaluation and management of MHSDD start with routine screening during visits to a sex clinic. Decrease sexual desire screener is a 5-item questionnaire tool widely used as a screening tool for hypoactive sexual desire disorder (Clayton, 2009). The questionnaire-based assessment findings suggestive of MHSDD are further examined/assessed with detailed sexual history and comorbidities such as diabetes and hypothyroidism. The assessment is extended with psychological examination for depression, anxiety, relationship issues, etc. Hormonal assay for testosterone, prolactin, and gonadotropin hormones and investigation for co-morbid conditions like diabetes and hypothyroidism are included in the assessment of MHSDD (Clayton, 2018).

Treatment of MHSDD primarily focuses on managing the underlying cause and associated co-morbid conditions. The pharmacotherapeutic approach includes the supplementation of testosterone hormones in the case of prolactinoma, pramipexol, and bupropion, but none of the agents are approved for MHSDD. Filbensaerin is FDA approved drug for female hypoactive sexual desire disorder and not for MHSDD. Psychotherapeutic approaches like dual sex therapy by Masters and Johnson (Master, 1996), cognitive behavior therapy, and psychoanalytical psychodynamic therapy are included in the management of MHSDD (Abdallah, 2007).

5. Dhat syndrome: The term Dhat syndrome was given by the late Prof N.N. Wig in 1960. Dhat

syndrome is a culture-bound syndrome. Classification system ICD-10 considers Dhat syndrome in another nonpsychotic mental disorder (F48) category, and DSM-5 mentions Dhat syndrome in the appendix section (Prakash, 2019). The prevalence rate of Dhat syndrome is varied from 7-to 64 % in special sex clinics (Kendurkar, 2008; Kar, 2021). Dhat syndrome is usually presented by young unmarried or newly married males, who belong to low-middle socioeconomic status, have rural backgrounds, and have a conservative attitude toward sex.

In Dhat syndrome, individuals report loss of semen in urine, during sleep, masturbation, and suffer from various nonspecific somatic symptoms, e.g., fatigue, anxiety, headache, asthenia, and depressive symptoms. Depression (40-42%), anxiety (21-38%), somatoform / hypochondriasis (32-40%), erectile dysfunction (22-62), premature ejaculation (22-44%) are associate comorbidities with Dhat syndrome (Prakash, 2007). Ayurved and ancient literature from India mentioned that semen is a precious

body fluid and that loss of semen leads to poor health (Deb, 2013).

Management of Dhat syndrome encompasses detailed history taking to confirm the diagnosis, evaluation of comorbidities associated with Dhat syndrome, assessment for venereal disease, and detailed urine analysis. Psycho-education, culture-informed cognitive behavioral therapy, relaxation therapy, low dose antianxiety, and antidepressants are commonly used (Awasthi, 2017).

Conclusion: Male sexual disorder is a group of heterogeneous disorders with multifactorial etiopathology. Although MSD has the organic and psychosocial origin of an illness that belongs to multispecialty, e.g., endocrinal, genitourinary, neurological, and psychiatry, most MSD cases in the community are primarily attended by primary care physicians. A basic understanding of presenting symptoms and approach to MSD can enhance the skill and competency of primary care physicians to evaluate, treat, and appropriately refer MSD cases for a better outcome.

Table 1: Risk factors of ED

| Organic (80%) | Psychogenic (20%) |
|--|---|
| <ol style="list-style-type: none"> 1. Non-endocrine <ol style="list-style-type: none"> i. Vasculogenic (most common) <ol style="list-style-type: none"> a. Arterial inflow disorders b. Venous outflow disorders (corporeal veno-occlusion) ii. Neurogenic iii. Iatrogenic 2. Endocrine <ol style="list-style-type: none"> i. Reduced serum testosterone levels ii. Increase serum prolactin 3. Medications 4. Lower urinary tract symptoms (LUTS), e.g., benign prostatic hyperplasia | <ol style="list-style-type: none"> 1. Generalized type <ol style="list-style-type: none"> i. Generalized unresponsiveness <ol style="list-style-type: none"> a. Primary lack of sexual arousability b. Aging-related decline in sexual arousability ii. Generalized inhibition <ol style="list-style-type: none"> a. Chronic disorder of sexual intimacy 2. Situational type <ol style="list-style-type: none"> i. Partner related <ol style="list-style-type: none"> a. Lack of arousability in specific relationship b. Lack of arousability owing to sexual object c. High central inhibition owing to partner preference conflict or threat ii. Performance related <ol style="list-style-type: none"> a. Associated with other sexual dysfunctions b. Situational performance anxiety e.g., fear of failure like rapid ejaculation 3. Psychological distress or adjustment related <ol style="list-style-type: none"> a. Associated with negative mood state (e.g., depression) or major life stress (e.g., death of a partner) |

Table 2: Classification of premature ejaculation (PE)

| | Lifelong | Acquired | Variable | Subjective |
|---------------------|------------|--|------------------------|-------------------------|
| Prevalence | 2.3%-3% | 3.9%-4.8% | 8.5-11% | 5.1%-7% |
| IELT | <1 minute | <3 minute | Short/Normal | Prolong/Normal |
| Onset | Early | Anytime of sexual life | Anytime of sexual life | Anytime of sexual life |
| Risk factor | Genetic | Genitourinary ds. Hormonal disturbance Psychological | Normal variances | Psychological stressors |
| Ejaculation control | No control | Diminish | Diminish | Diminish |
| Prognosis | Poor | Variable | Good | Good |

Table 3: Structure involved in normal ejaculation process

| | Organ involved | Neuronal control | Event |
|--------------------------------|---|---|---|
| Emission | Epididymis Vas deferens. Seminal vesicles. Prostate gland & urethra. Bladder neck. | Pelvic plexus (sympathetic and parasympathetic innervations) | Sympathetic supply from thoracolumber lead to closure of bladder neck via alpha adrenergic to prevent retrograde ejaculation. |
| Expulsion (Ejaculation) | Bladder neck Urethra Pelvic floor muscles. | Spinal cord Pudendal nerve Motor neurons located in the nucleus of Onuf (ON). | Upper lumbar cord (L2/L4): emission phase Upper sacral cord (probably in S1/S2): expulsion phase |
| Orgasm | | | |

Table 4: Spinal ejaculatory generator

| Spinal ejaculatory generator | Peripheral structure | Central structure | Pathway | Neurotransmitters |
|--|--|---|---|--|
| Moderator for emission and ejaculation. (Central & peripheral structure) | Pudendal nerve Nucleus of Onuf (ON). Sacral parasympathetic motor neuron. Neurons in the area of lamina X. Lumbosacral region of spinal cord | Paragigantocellularis, Paraventricular nucleus of the hypothalamus Medial preoptic area. Nucleus paragigantocellularis (nPGi) | The projection from the central structure terminates in the lumbar preganglionic motor neurons, nucleus of ON, sacral parasympathetic motor neurons, and neurons in the area of lamina X, where ejaculation generators are supposed to be located. Serotonergic projections from the nucleus paragigantocellularis (nPGi) in the brain stem exert tonic inhibition of ejaculation via the motor nucleus in the lumbosacral spinal cord, influencing the spinal ejaculation generator in the spinal control center located in the lumbosacral spinal cord. | serotonin (5HT), dopamine, oxytocin, gamma-aminobutyric acid (GABA), adrenaline, acetylcholine, and NO |

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Review Article

Male sexual dysfunction and comorbidity

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Abstract

Introduction: Male sexual dysfunction is prevalent among individuals with psychiatric or physical comorbidities. Psychiatric disorders per se can cause male sexual dysfunctions; psychotropic medications used in their treatment can also result in male sexual dysfunctions. Thus, having sound knowledge about these variables would assist clinicians in comprehensive assessment and management. This paper aims to review existing literature on male sexual dysfunctions with co-morbid psychiatric and physical illnesses, including their management.

Methodology: PubMed and Google Scholar databases were searched, along with bibliographic- and grey literature search, to obtain relevant records. We described the findings of the review narratively.

Results: A total of 34 records were eligible for the current review. Male sexual dysfunctions are frequent with psychiatric (e.g., psychotic disorders, depression, substance use disorders) and physical (neurological-, cardiovascular-, and genitourinary

conditions) illnesses. Medications, both psychotropic, e.g., selective-serotonin-reuptake inhibitors, antipsychotics and non-psychotropic, e.g., beta-blockers, thiazides, are equally implicated in male sexual dysfunction. Therefore, treating underlying co-morbid illnesses,

reducing/discontinuing the offending drugs, and switching to an agent with lesser adverse sexual effects are the cornerstone of the management. Furthermore, using medications, e.g., phosphodiesterase inhibitors, devices like prostheses and implants, and correction of genito-urinary conditions are also equally important.

Conclusion: Better knowledge and understanding of sexual dysfunctions among co-morbid psychiatric or physical illnesses, adequate assessment, and formulation of a comprehensive treatment plan are crucial to addressing these comorbidities.

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Introduction

Male sexuality is a complex physiological process involving the interplay of multiple bodily systems like the nervous systems, genitourinary systems and cardiovascular systems. Additionally, it is influenced by socio-cultural and psychosocial factors (Kandeel et al., 2001). The different factors affecting sexual function involve partner's sexual functions or general physical condition, relational aspects, e.g., poor communication, disparities in desire for sexual activity, history of sexual or emotional abuse, or psychiatric comorbidities such as depression, anxiety, etc., cultural or religious factors such as prohibitions concerning sexual activity (American Psychiatric Association, 2013). Besides these factors, aging results in the expected decline in the sexual responsiveness of an individual (Chung, 2019).

The male sexual cycle is divided into the excitement, orgasmic, and resolution phases. The excitement phase entails desire and erection, the orgasmic step entails ejaculation, while the resolution phase involves the general feeling of well-being and enhanced intimacy (Sadock et al., 2017; Wylie and Kenney, 2010).

The dysfunction in one phase of the sexual cycle may increase the risk of developing sexual dysfunctions in another domain, e.g., low sexual desire may result in an insufficient erection. However, these dysfunctions may also be completely independent, like the inability to attain erection despite an adequate or high degree of sexual attraction as the case in various organic or psychological disorders (Rowland et al., 2021).

Sexual dysfunction is a significant cause of poor quality of life (QoL), and treatment can be challenging if comorbidities or underlying aetiologies are not identified and managed. Some mental disorders (e.g., depression, schizophrenia) have sexual dysfunctions as manifestations of the disease itself, where treatment of primary diagnosis can lead to spontaneous improvement in sexual dysfunctions. Furthermore, medications used to treat these primary diagnoses (e.g., SSRIs for depression or beta-blockers for hypertension) can cause sexual dysfunctions or worsen them. In such cases, sexual dysfunction can cause poor

compliance, complicating the management (Ghormode et al., 2019; Montejo et al., 2018).

Despite the topic's significance, overall, there is a lack of literature differentiating various aspects of the male sexual dysfunction vs. female sexual dysfunction; literature tends to describe them together, which otherwise can have critical clinical implications (Kok, 2004). Moreover, the available literature is limited to studying only one/or two sexual dysfunctions, which can lead to missed diagnosis of other sexual dysfunctions. Additionally, if medical and psychiatry comorbidities are not assessed appropriately, the incidence and prevalence of sexual dysfunctions may be over or underestimated. Likewise, they can be wrongly attributed to the primary physical or mental disorders or the medications used. Furthermore, these co-morbid conditions can adversely affect the management of sexual dysfunctions (Polland et al., 2018).

Therefore, there is a need for an active comprehensive assessment of all sexual dysfunctions, not just relying on patient's reporting, rather evaluating underlying or co-morbid conditions to improve patient's quality of life and compliance to treatment.

Methodology: A literature search was undertaken by screening PubMed and Google Scholar databases. Search terms used were male sexual dysfunctions, erectile dysfunction (ED), hypoactive sexual desire disorders, ejaculation problems, premature ejaculation (PME), delayed ejaculation, anorgasmia, disorders of orgasm (for sexual dysfunctions); psychiatric disorders/illnesses, mental issues, mental disorders (for psychiatric comorbidities); and medical comorbidities, physical illnesses/disorders (for medical comorbidities).

Findings: The search resulted in 822 articles. Upon title and abstract screening and subsequent full texts screening, only 34 articles were relevant for the review. The highest number of the studies were related to sexual dysfunctions with co-morbid cardiovascular disorders (n=9), followed by endocrinological disorders (n=7), including metabolic syndrome and androgen deficiency states, chronic medical disorders as a whole

(n=4), treatment of sexual dysfunctions in chronic medical illnesses (n=4), urogenital and age-related sexual dysfunction (n=1 each). Concerning the mental disorders and co-morbid sexual disorders (n=9), the highest number of the studies were on depression (n=3), followed by mental illnesses as a whole (n=3), schizophrenia (n=2) and psychotropic-induced sexual dysfunctions (n=1).

A. Male sexual dysfunction and co-morbid medical conditions

A recent systematic review and meta-analysis from Ethiopia involving both institute-based and community-based participants showed the pooled prevalence of sexual dysfunction to be 68.04% (Abosetugn and Yehualashet, 2021). Likewise, another meta-analysis reported the pooled prevalence of erectile dysfunction in diabetes mellitus to be 71.45% (Shiferaw et al., 2020). However, here authors did not describe the setting of the study. Similarly, a recent meta-analysis involving 34 studies conducted on chronic kidney disease patients reported an overall prevalence of erectile dysfunction to be 76% (Pizzol et al., 2021). In medical conditions, assessment and management are challenging and need detailed knowledge of various medical illnesses and pathophysiology. It is equally important to rule out psychogenic factors leading to sexual dysfunctions in patients suffering from medical diseases.

Etiological aspects of sexual dysfunction with co-morbid medical illness

Medical illnesses can affect sexual functioning in various ways and have myriad explanations. It is crucial to note that many patients may have a multifactorial etiology for sexual dysfunctions. Other conditions that can substantially affect sexual function are advanced age, chronic diseases, malnutrition, medication side effects, nicotine, drug and alcohol use, and abuse.

One of the more difficult challenges clinicians faces when treating erectile disorder (ED) is ruling out conditions most likely attributable to medical factors. Apart from psychological factors, ED can have several physiological etiologies. Acquired ED has been associated with

biological factors, including diabetes, cardiovascular diseases (CVDs), neurological illnesses, etc. It is important to understand that whether erectile dysfunction is caused by psychological factors or medical disorders.

Additionally, there are modifiable risk factors for acquired ED, such as sedentary lifestyle, diabetes, etc., that should be considered. Finally, the treatment of medical conditions threatens the development of sexual dysfunctions. For example, cytotoxic drugs, hormonal agents, and cardiovascular medications have been implicated in various sexual dysfunctions.

Pathophysiology of sexual dysfunction and medical diseases

Optimal sexual functioning can be affected by various implicating factors related to medical illnesses. Ejaculation can be compromised due to interruption in the nerve supply to the genitalia; such complications can occur in surgeries in the abdominal region, where traumatic injury can occur to lumbar sympathetic ganglia (Clayton and Ramamurthy, 2008). Prostatectomy or any genitourinary surgery in males can cause failure in ejaculation as a complication. Many neurodegenerative diseases like multiple sclerosis, diabetic neuropathy, and alcoholic neuropathy can affect the autonomic nervous system, affecting ejaculation. Ejaculation is regulated by the Hypogastric (sympathetic) nerve and Pudendal (parasympathetic) nerve. There is a loss of fast conducting peripheral sensory nerves and reduced steroid secretion with aging, which causes delayed ejaculation in elderly males. In males, the inability to experience orgasm may stem from neurological disorders affecting the lumbosacral spine or pain and paraesthesia from external genitalia (Clayton and Ramamurthy, 2008; Imprialos et al., 2018; Zemishlany and Weizman, 2008).

Neurological disorders

Neurodegenerative disorders like Alzheimer's disease, frontotemporal dementia, amyotrophic lateral sclerosis, dementia with Lewy Bodies, multiple system atrophy, cortico-basal degeneration, progressive supranuclear palsy, Huntington's disease can result in a disturbance in autonomic

function, pain, and interruption in sensory-motor coordination. It is also understood that sexual problems can be due to medications used to treat neurodegenerative disorders and movement disorders (Malcher et al., 2021). Spinal cord injury can affect or reduce nerve impulses from the brain to the penis and lead to ED. Pelvic injuries can cause nerve disruption and cause ED.

Cardio-vascular disorders

Hypertension leads to increased peripheral sympathetic activity, heightened vasoconstrictor tone, and reduced endothelium-dependent vasodilation. Changes in the cyclooxygenase pathway can play a crucial role as they can cause an increase in reactive oxygen species and cause more damage to normal endothelial functioning. It is to be emphasized that many disease states will have endothelial-dependent vasodilation in dysfunctional form. Hypertension can affect sexual function in many ways, including causing endothelial abnormalities, and reduced vasodilatory capacity occurs as structural alterations in vascular and corporal remodeling.

Endocrinological conditions

Sexual dysfunctions are common, particularly among individuals with diabetes mellitus, hypothyroidism, and an androgen deficient state (Burger and Papalia, 2006; Clayton and

Ramamurthy, 2008). In males with SD, who has diabetes, hardening and narrowing of blood vessels supplying the erectile tissue of genitalia occur. Furthermore, diabetes mellitus directly affects erection through the nervous system.

Uro-genital disorders

In rectal cancer patients receiving proctectomy for treatment, sexual dysfunction is commonly seen. It is noticed that males report long-standing distress even after years of surgery. ED can occur due to interruption in the inferior hypogastric plexus, and disruption in the superior hypogastric plexus leads to ejaculatory problems (Shivananda and Rao, 2016).

The male endocrine system is affected by chronic kidney diseases, resulting in diminished testosterone levels. Low testosterone levels occur due to hypogonadotropic hypogonadism. There is also reduced libido and altered body image and fertility. Hormonal actions are affected as progressive renal dysfunction continues to occur. Metabolism of hormones or excretion by kidneys is altered. Due to chronic renal dysfunction, circulating binding proteins are changed, and concentration is disturbed. Hyperprolactinemia is also observed in chronic kidney disease patients, resulting in ED, reduced libido, gynecomastia, and infertility (Edey, 2017).

Table 1: Sexual dysfunctions related to chronic medical illness

| Mechanism | Medical Conditions and Factors |
|--|---|
| Influence on libido due to nonhormonal medications | Narcotics can depress desire through gonadotropin suppression. SSRIs reduce desire and response |
| Alteration in sexual desire due to diseases | Typically reduced due to hyperprolactinemia and anemia of chronic renal failure. It may be increased in some brain disorders (Kluver-Bucy syndrome, frontal lobe lesions). |
| Influence of pain on sexual desire and response | Pain d/t medical condition (e.g., neurological/ cancer pain) are potent sexual distraction |
| Disease-causing interruption in genital response | ED from multiple sclerosis, hypertension, orgasmic disorder from multiple sclerosis |
| Effect of antiandrogen treatment on sexual desire | Gonadotropin-Releasing Hormone (GnRH) therapy in prostate cancer |
| Disruption of genital response from surgery | Radical prostatectomy and ED |
| Disruption of sexual desire and response from chemotherapy | Testicular failure after intensive chemotherapy for hematopoietic transplantation |

d/t: due to, ED: erectile dysfunctions, SSRIs: selective serotonin reuptake inhibitors

B. Psychiatric comorbidities with sexual dysfunctions

Literature suggests a bidirectional association between sexual dysfunction and different mental health disorders. Sexual dysfunction is more prevalent in individuals with psychiatric illnesses (about 50%) compared to the general population and those with medical conditions. Further, among psychiatric disorders, sexual dysfunction is more common in schizophrenia (about 75%), followed by bipolar disorders (>50%), depressive

disorders (40 to 50 %), and anxiety disorders (about 20%) (Abdelatti et al., 2020).

When comparing sexual dysfunctions among mental disorders, sexual dysfunctions affecting orgasm and satisfaction were more common in schizophrenia than in bipolar disorders, depressive disorders, and anxiety disorders. In contrast, the incidence of ED and hypoactive sexual desire disorders was similar among different mental disorders (Abdelatti et al., 2020). Table 2 lists the typical sexual dysfunctions usually co-morbid with various psychiatric

Table 2: Common sexual dysfunctions (Sexual dysfunctions) co-morbid with psychiatric disorders

| Psychiatric disorders | Comorbid Sexual dysfunctions | Remarks |
|---|---|--|
| Psychosis | <ul style="list-style-type: none"> • Reduced desire, ED, PME^{1,2} | |
| Bipolar disorder | <ul style="list-style-type: none"> • Hypersexuality during mania / hypomania • Decreased libido during depressive phase | <ul style="list-style-type: none"> • May be a manifestation of underlying psychopathology or disinhibited behaviour |
| Depression | <ul style="list-style-type: none"> • Common sexual dysfunctions - sexual arousal disorders, ED, lower subjective arousal • Fewer minutes of NPT, penile rigidity • Sexual desire disorders: decreased libido and sexual desire • Some reports of increased libido sexual desire • Less satisfaction with sexual activities | <ul style="list-style-type: none"> • The severity of illness correlates with the prevalence of SD³ |
| OCD | <ul style="list-style-type: none"> • Lower sexual arousal, PME, ED, and sexual dissatisfaction | <ul style="list-style-type: none"> • Fewer studies on men |
| GAD | <ul style="list-style-type: none"> • Affects all phases of the sexual response cycle | <ul style="list-style-type: none"> • Performance anxiety and cognitive distortions about sexuality are common. • Impact of socio- cultural factors is more pronounced. |
| Panic disorders | <ul style="list-style-type: none"> • PME, ED, sexual aversion, MHSDD, orgasmic disorder | |
| Social phobia | <ul style="list-style-type: none"> • Most common - PME, • Lower frequency of orgasm, decreased arousal, less sexual satisfaction | |
| PTSD | <ul style="list-style-type: none"> • Most common: ED and increased sexual frequency; • Others- PME, MHSDD, Sexual avoidance, dissatisfaction, • Lower sexual desire, arousal, activity, satisfaction | <ul style="list-style-type: none"> • Past traumatic events often result in Sexual dysfunctions • Lack of trust in the partner and perceived vulnerabilities are common attributes of sexual dysfunctions in these population |
| Behavioral & psychological symptoms of dementia (BPSD) | <ul style="list-style-type: none"> • Sexual disinhibition⁴ | <ul style="list-style-type: none"> • Due to memory and cognitive decline |

ED: erectile dysfunction, PME: premature ejaculation, NPT nocturnal penile tumescence, MHSDD: Male hypoactive sexual desire disorder, OCD: Obsessive compulsive disorder, GAD: Generalized anxiety disorders, PTSD: posttraumatic stress disorder,

1. Macdonald et al., 2003 2. Malik, 2008 3. Clayton et al., 2014 4. Sadock et al., 2017

Sexual dysfunction in schizophrenia or psychosis may be an independent phenomenon associated with the core psychopathology like negative-, cognitive-, positive symptoms (delusion/hallucination)(Sadock et al., 2017) or antipsychotic-induced (Bitter et al., 2005). Additionally, substance use like nicotine or alcohol in these patients may further affect sexual function (Macdonald et al., 2003; Malik, 2008).

Mood disorders, including bipolar and depressive disorders, also have high comorbidity with sexual dysfunction (Kennedy et al., 1999; Waldinger, 2015). Any sexual conditions may arise in depression, and the most common is loss of libido (Clayton et al., 2014; Laurent and Simons, 2009a). However, some patients with depressive disorders may have increased libido (a typical feature), indicating a mixed episode or bipolarity. Sexual dysfunction in mood disorders can be due to anhedonia in a depressive episode and hypersexuality or disinhibition as a manifestation of a mania or hypomania episode. Sexual disinhibition may also be seen in a background of memory impairment and confusion in cases of pseudodementia or dementia (Nordvig et al., 2019). In bipolar disorders, patients usually have alternating decreased desire and hypersexuality according to the current phase of illness. Furthermore, sexual dysfunctions in mood disorders may be related to antidepressants, mood stabilizers, or agents like benzodiazepines, anticholinergics, and anticonvulsant drugs (La Torre et al., 2014a).

Similarly, any sexual problem may arise with anxiety disorders, but decreased sexual desire and sexual aversion are more prevalent. Concerning anxiety-spectrum disorders, generalized anxiety disorders (GAD) can affect all stages of the sexual cycle (Johnson et al., 2004; Laurent and Simons, 2009a), while obsessive-compulsive disorders (OCD) (Monteiro et al., 1987) and panic disorders (Figueira et al., 2001) are often associated with decreased sexual desire and sexual aversion. Moreover, these may also result in decreased arousal, pain, and reduced satisfaction. Social phobia may diminish sexual desire and causes PME, but it may also impair other phases of the sexual cycle (Bodinger et al., 2002; Laurent and Simons, 2009a). Post-

traumatic stress disorder (PTSD) has been linked to sexual aversion, pain, ED, and PME (Kotler et al., 2000; Solursh and Solursh, 2011). While there is a dearth of systematic research relating sexual functioning to anxiety disorders, most data demonstrate significant correlations between sexual dysfunction and multiple aspects of anxiety (Laurent and Simons, 2009a).

C. Psychotropic medications and sexual dysfunctions

Although psychotropic medications can improve sexual dysfunctions by correcting underlying psychopathologies, they also risk precipitating or worsening sexual dysfunction. The susceptibility and type of sexual adverse effects vary from the class of drugs and from person to person. Most of the sexual dysfunctions caused by them are reversible and resolve after the cessation of the offending agent. Nevertheless, again, clinical trial's assessment of sexual adverse effects is limited by the lack of validated questionnaires and proper controls in studies (Khin et al., 2015). Sexual functions result from intricate interactions between the cardiovascular, musculoskeletal, sympathetic, and parasympathetic nervous systems of the human body. Additionally, various drugs can affect sexual function by one or the other mechanism (Kandeel et al., 2001). Table. 4 lists the major categories of psychotropics and sexual dysfunctions associated with them.

Among antipsychotics, the most crucial cause for various sexual dysfunctions is hyperprolactinemia, esp. with first-generation antipsychotics, while sexual dysfunctions are less common with prolactin-sparing antipsychotics (Aizenberg et al., 1995; Raja, 1999; Serretti and Chiesa, 2011; Smith, 2003). Consequently, the risk of sexual dysfunction is highest with risperidone and haloperidol and lesser with agents like aripiprazole and quetiapine (Baggaley, 2008; Bitter et al., 2005; Montalvo et al., 2013; Peluso et al., 2013). Similarly, asenapine (Ajmal et al., 2014), brexpiprazole (Citrome, 2015), cariprazine (Nasrallah et al., 2017), and lurasidone (Citrome et al., 2012) are not known to cause sexual dysfunctions.

Among antidepressant medications, selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs), and monoamine oxidase inhibitors (MAOI) are well known for affecting all stages of the sexual cycle, the most common being delayed ejaculation (Sadock et al., 2017; Torre et al., 2013). These sexual dysfunctions are often dose-dependent and reversible (Clayton et al., 2014; Wagner et al., 2018). The incidence and the type of sexual dysfunctions among different antidepressants vary depending on the drug's pharmacological profile. Drugs like Bupropion, mirtazapine and mianserine, reboxetine, are milnacipran safer in this regard (Cleare et al., 2015; Reichenpfader et al., 2014). Some of these adverse effects are even clinically utilized to treat sexual dysfunctions, for instance, dapoxetine's use in PME (McMahon, 2012) or use of trazodone for ED (Montejo et al., 2018).

Another important class of psychotropics is mood stabilizers, including drugs like lithium and anticonvulsants like valproate, carbamazepine, etc. Lithium monotherapy is not commonly associated with significant sexual dysfunctions. However, sexual dysfunction can occur with it, particularly when used with other drugs, e.g., benzodiazepines, whereas anticonvulsants can cause decreased libido due to their testosterone lowering potential (Lossius et al., 2007).

However, it should be underscored that most of the data on anticonvulsants related sexual dysfunctions pertaining to their use on patients with epilepsy and as we know, epilepsy can have an independent effect on sexual dysfunction. Thus, the independent effect of these agents in patients without epilepsy needs further studies (La Torre et al., 2014b).

Anxiolytics can adversely affect sexual functioning. Benzodiazepines such as clonazepam can cause sexual dysfunctions secondary to sedation and muscle relaxation. However, considering their frequency of use, the risk is only small. In contrast, some anxiolytics like buspirone may improve sexual dysfunctions especially in cases associated with significant anxiety (Gitlin, 2003).

Literature suggests that both illicit (opioids, marijuana, cocaine, stimulants, etc.) and licit substance (alcohol, tobacco smoking) use (in males) can result (Table 4) in significant sexual dysfunction (Johnson et al., 2004). The opioids are associated with high rates of sexual dysfunction, both while being used and after the cessation. Sexual dysfunctions can also occur during the opioid substitution therapy (methadone & buprenorphine) and opioid-antagonist treatment (Naltrexone) (Nik Jaafar et al., 2013; Ramdurg et al., 2012; Sathe et al., 2001).

Table 3: Effect of medications on sexual functioning

| Medications | Effect on sexual functioning |
|---|---|
| Cardiovascular medications: antihypertensives, antiarrhythmics, beta-blockers, calcium channel blockers, diuretics, lipid-lowering medications, vasodilators, combination agents | Erectile dysfunction, Decreased libido in both genders and Ejaculatory or orgasmic delay or inhibition |
| Chemotherapeutic agents: antineoplastic, cytotoxic agents, anti-metabolites, alkylating agents, hormones, immunomodulators | These drugs have high toxicity; however, their impact on sexual functioning is poorly studied. Decreased libido is a frequent complication of chemotherapeutic agents. |
| Medications used in urogenital system: drugs used for urinary incontinence, benign prostatic hypertrophy prostatic and/or cancer | Finasteride is associated with ED or delayed ejaculation. Imipramine (TCA), used in enuresis and occasionally in incontinence, commonly cause ED and other impairment of sexual functioning |
| Medications used in neurology: antiepileptics, antiparkinsonian medications, anti-migraine medications | Decreased libido. Carbamazepine affects levels of sex hormones and SHBG. Antiparkinsonian drugs may result in hypersexuality |

ED: erectile dysfunction, SHBG: sex hormone-binding globulin, TCA: tri-cyclic antidepressants

Likewise, agents like cocaine, cannabis (marijuana), and psychostimulants (3,4-Methylenedioxyamphetamine (MDMA)), although initially can enhance some aspects of the sexual functioning of an individual, in the long run, they can result in sexual dysfunctions in the form of erectile dysfunction, decreased libido, and anorgasmia (Johnson et al., 2004; McElrath, 2005; Sadock et al., 2017; Zemishlany et al., 2001). Alcohol use can have short and long-term effects on different phases of the sexual cycle (mostly leading to ED), with an overall prevalence of sexual dysfunction being 40-95% (Grover et al., 2014). Similarly, tobacco smoking can lead to ED either by its independent effect or by enhancing the pathological changes due to other systemic diseases like cardiovascular diseases, hypertension, and diabetes mellitus (Kovac et al., 2015).

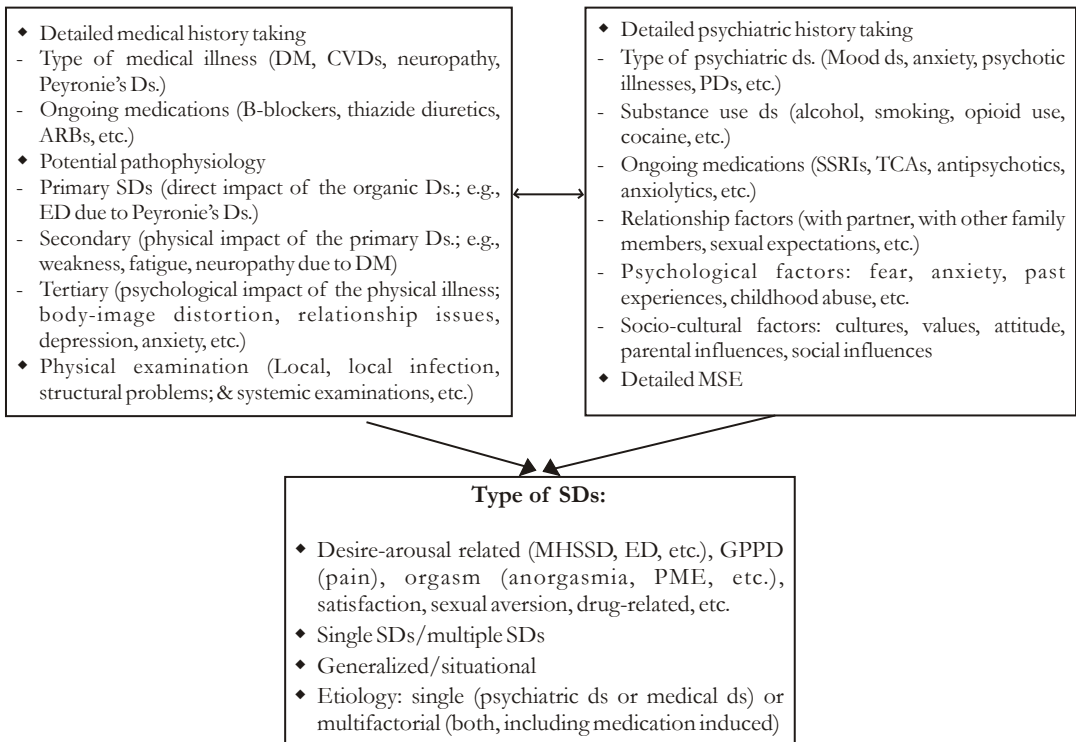
Commonly used agents like antihistaminic and anticholinergic drugs may also lead to sexual

dysfunctions by blocking cholinergic receptors, which play an essential role in erection. Lastly, the alpha and beta receptor antagonists affect sexual function by decreasing the sympathetic tone and vascular changes (Sadock et al., 2017).

Assessment and management of the sexual dysfunction in individuals with co-morbid medical/psychiatric illnesses

Assessment: A thorough evaluation should start with establishing rapport with the patient, including being sensitive to his socio-cultural background and exploring his belief system. The clinician must provide adequate time and support to the patient to share his difficulties. Furthermore, confidentiality must be maintained at all costs; partners/significant others can be involved in treatment if the patient wishes to (Figure 1).

Figure 1: Flow-diagram of the assessment of sexual dysfunction in individuals with medical/psychiatric comorbidities



ARBs: angiotensin-receptor blockers, DM: diabetes mellitus, MAOI: monoamine oxidase inhibitors, MHSSD: male hypoactive sexual desire disorders, MSE: mental state examination, PDs: personality disorders, PME: premature ejaculation, SDs: sexual dysfunctions, SSRIs: selective serotonin reuptake inhibitors, TCAs: tri-cyclic antidepressants,

First and foremost is enquiring about the sexual functioning (or dysfunction) of all the individuals with chronic medical conditions or co-morbid psychiatric disorders, particularly considering the high prevalence of sexual dysfunctions in these patients (Figure 1).

Furthermore, sexual dysfunctions should be considered a continuum with medical and psychiatric disorders rather than having a dual notion (Basson and Gilks, 2018). The cornerstone of a comprehensive assessment includes detailed medical and psychiatric history taking, including psychoactive substance (PAS) use, and conducting a thorough physical and mental state examination, respectively. A close look at their medical records, including those of allied disciplines (e.g., urologists, neurologists, endocrinologists, etc.), and being aware of the impact of the co-morbid medical/psychiatric illnesses and their medications on sexual dysfunctions are vital. A detailed physical examination, both local (e.g., any structural abnormality, infection) and systematic examinations (peripheral pulse, neurological examination, etc.), is imperative.

A detailed psychiatric history must incorporate early childhood experiences, including abuse, and personality traits (emotionally unstable, narcissistic, anxious-avoidant, or anankastic, etc.) (Clayton and Ramamurthy, 2008; Zemishlany and Weizman, 2008). Additionally, the Mental State Examination should explore the co-morbid mood-, anxiety-, or substance use disorders. Furthermore, cognitive distortions (e.g., body-image concerns), cognitive functioning, judgment, and insight about the ongoing illnesses (or motivation to quit substances) must also be adequately assessed.

Additionally, the meaning of sexuality for the patients and how current sexual dysfunctions have affected various domains of his life must be explored. Furthermore, their treatment outcome expectancies should be part of a comprehensive assessment.

Proper liaising with specialists of allied disciplines (e.g., neurologist, urologist) would help the mental health professionals/psycho-

sexual medicine specialists conduct a proper assessment and formulate a robust treatment plan.

Additionally, a detailed inquiry about the psychological, cognitive, socio-cultural, relational, and QoL aspects of the patients about sexuality and sexual dysfunctions are vital. Involving a partner early in the treatment process, as the patient wishes to, can have both short and long-term positive effects (Zemishlany and Weizman, 2008).

Identifying the cause of sexual dysfunction has a considerable impact on the diagnosis. Sexual dysfunctions can be the direct effect of the underlying physical/psychiatric illness (Primary Sexual Dysfunctions) or secondary to the physical effects of the underlying disease, e.g., weakness, neuropathy, easy fatigability of the depression, etc. (Secondary Sexual Dysfunctions) or an outcome of the psychological impact of the physical illness, e.g., body-image distortions, relationship issues, performance anxiety, etc. (Tertiary Sexual Dysfunctions) (Clayton and Ramamurthy, 2008).

Sexual dysfunction has multifactorial etiologies, or they are outcomes of complex interaction among several variables. Apart from the bio-psychological factors, socio-cultural factors also play a huge role in determining an individual's sexual function (or dysfunction) and the latter's implications in one's life. The Diagnostic and Statistical Manual-5 of mental disorder (DSM-5) also highlights this aspect when it describes how socio-cultural factors can determine the clinical manifestations of various sexual disorders, the perceived level of morbidity among the individuals, their motivation to seek treatment for those problems, and the kinds of treatment one may be willing to receive (American Psychiatric Association, 2013). Thus, identifying these interrelationships is an essential part of the assessment and subsequent management.

Questionnaire-based assessment of sexual functioning (e.g., sexual functioning questionnaire) may assist a health professional in a thorough exploration of sexual functioning across different domains (Smith et al., 2002).

Furthermore, it aids in identifying cooccurring sexual dysfunctions, e.g., ED with PME, decreased desire associated with the arousal problems, genital pain/penetration problems, and sexual dissatisfaction. Thus, ensuring any crucial aspect of sexual issues is not missed (Zemishlany and Weizman, 2008).

Management: Managing sexual dysfunction with co-morbid physical/ psychiatric illnesses is often challenging for clinicians. However, there are some general principles that, if followed, can help in the comprehensive management and attaining a good outcome.

- 1) Adequate psychoeducation to the patient about the nature of the condition, treatment, course, and outcome
- 2) Employing a multi-disciplinary approach (involving specialists of allied disciplines)
- 3) Addressing patient's/partner's concerns, (his) intra and (their) interpersonal issues, and treatment expectancies
- 4) Removing modifiable risk factors like offending medications, psychoactive substance use, psychosocial issues, local pathologies, etc.
- 5) Treating by considering the cultural values of the patient and his meaning of normal sexual functioning
- 6) Unfounded or unrealistic expectations from the treatment should be addressed then and there itself
- 7) Stepped care approach: choosing a less invasive treatment first (psychosocial interventions, lifestyle modifications, etc.) then, depending upon the response, going for more intensive therapies (medications, devices, and surgeries)

The management of common physical illnesses co-morbid with the sexual dysfunctions has been described below (Table 5):

Cardiovascular disorders: Sexual dysfunctions, particularly ED, often herald underlying cardiovascular diseases (Reffellmann and Kloner, 2006). Anti-hypertensives, particularly non-selective sympatholytic drugs, e.g., propranolol, angiotensin receptor blockers (enalapril, etc.)

and thiazide diuretics can worsen ED (al Khaja et al., 2003). Similarly, nitrate should be avoided in individuals requiring phosphodiesterase inhibitors (e.g., Sildenafil) for treating ED. With PDEIs, nitrate can result in significant hypotension, precipitating unstable angina or myocardial infarction. However, cardio-selective beta-blockers and Angiotensin-Converting Enzyme Inhibitors are safer options. Additionally, phosphodiesterase inhibitors such as sildenafil or tadalafil effectively manage ED in these individuals.

Neurological disorders: Sexual dysfunctions arise secondary to decreased genital sensation, absent lubrication, decreased desire secondary to gonadotropin deficiency, etc. Phosphodiesterase inhibitors are usually less effective in these conditions (Demirkiran et al., 2006; Rees et al., 2007). Testosterone supplementations, lubricants, dopamine agonists (e.g., ropiranoles), and invasive procedures such as intra-cavernous vasodilators (papaverine, prostaglandins, etc.), and vacuum tumescence are effective. It is also crucial that the clinicians attend to the psychosocial problems arising secondary to neurological conditions in patients through proper psychoeducation and psychotherapies (Clayton and Ramamurthy, 2008). Finally, early rehabilitation and addressal of stroke patients' nutritional, cognitive, and emotional needs can ameliorate their sexual dysfunctions (Rees et al., 2007).

Endocrinological diseases: ED is prevalent in individuals with Diabetes Mellitus (secondary peripheral neuropathy, body-image distortions, intra-/interpersonal issues, co-morbid depression, etc.), thyroid disorders, and androgen deficiency (Bhasin et al., 2007). Adequate glycaemic control, achieving a euthyroid state, and testosterone replacement therapy are effective treatment options for these conditions, respectively (Table 5). Furthermore, the associated psychological problems could be managed with evidence-based non-pharmacological interventions such as Cognitive Behavioural Therapy for co-morbid mild-moderate depression and body-image distortions and couple therapy for marital issues. PDEIs can also be added for erectile dysfunctions.

Genito-urinary conditions: Prostatitis, Peyronie's disease, chronic renal failure (CRF), etc., are frequently associated with sexual dysfunction (Clayton and Ramamurthy, 2008; Soykan et al., 2005). Treating underlying infection/inflammation, using PDEIs, encouraging coital activities, particularly in Peyronie's disease where spontaneous improvement is likely (Basson and Schultz, 2007; Mynderse and Monga, 2002), correcting the hormonal or metabolic abnormalities (in case of CRF), and whenever required medications (PDEIs for ED) or other non-invasive procedures are key steps.

Metabolic syndrome or obesity: Decreased desire and ED are common among individuals suffering from metabolic syndrome or obesity (Lee et al., 2012). Lifestyle modifications (e.g., smoking cessation, proper diet); PDIEs (for ED), testosterone replacement therapy, and aromatase inhibitors, e.g., Letrozole (for hypogonadism); psychosocial interventions (for underlying fear, anxiety, cognitive distortions, etc.); and surgical procedures, whenever required, such as bariatric surgery, the intra-penile prosthesis can significantly improve sexual functioning and QoL (Vaishnav et al., 2022).

As highlighted above, co-morbid psychiatric disorders or psychological problems have a bi-directional relationship with sexual dysfunction. Some of the essential considerations while managing these individuals have been enumerated in Table 5.

Depression: Commonly used antidepressants such as SSRIs, TCAs, and MAOIs further worsen sexual functioning (lead to ED, delayed ejaculation, anorgasmia, etc.). Hence, management of sexual dysfunctions in co-morbid depression is decreasing the dose of the offending agent, drug holiday, and switching to a drug with favorable sexual functioning profiles such as mirtazapine, mianserin, trazodone/nefazodone, bupropion, or addition of buspirone (5HT_{1a} partial agonist) or cyproheptadine (5HT_{2A} antagonist) (Laurent and Simons, 2009b) are crucial strategies. Furthermore, PDEIs (sildenafil 25mg OD/BD or Tadalafil 10-20mg OD to be used before the act) are particularly useful for ED.

Anxiety and related disorders: Social anxiety disorders often result in performance anxiety leading to ED and PME (Laurent and Simons, 2009b). Similarly, past experiences of individuals with PTSD predispose them to several sexual dysfunctions; even anxiolytic induced (e.g., clonazepam) sexual dysfunctions are common among them. Likewise, for depression, mirtazapine, buspirone, and PDEIs are effective medications for these symptoms. Additionally, psychodynamic psychotherapy (to allay the unconscious conflicts), Cognitive Behavioural Therapy, Behavioural Therapy (e.g., relaxation therapy, systematic desensitization, etc.), and couple therapy can effectively manage sexual dysfunction with co-morbid anxiety disorders (Zemishlany and Weizman, 2008).

Schizophrenia and other psychotic diseases: Negative and cognitive symptoms of schizophrenia and antipsychotic medications used in its treatment can lead to sexual dysfunction. Managing underlying symptoms through pharmacological or non-pharmacological intervention, or through both can lead to reversal of sexual dysfunctions. However, antipsychotic medications, particularly first-generation antipsychotics (e.g., haloperidol, chlorpromazine) can cause or worsen sexual dysfunctions in these individuals. In contrast, SGAs have the lesser potential of causing them, albeit within-class variations, with clozapine having a comparable risk to FGAs. Risperidone (moderate risk) and olanzapine, quetiapine, and aripiprazole (least risk) are safer alternatives. Likewise, treatment of sexual dysfunction with co-morbid depression, decreasing the dose, switching to antipsychotics with lesser sexual adverse effects, adding PDEIs, and couple therapy is the cornerstone of the management (Zemishlany and Weizman, 2008).

Personality disorders: Sexual disorders are common in individuals with personality disorders, particularly with emotionally unstable personality disorders and narcissistic PD. Sexual dysfunctions emanate from past unpleasant experiences, intra/interpersonal psychological issues, and co-morbid mood or anxiety disorders (Zemishlany and Weizman, 2008). Attending to these psychological issues, coupled with psychological interventions for the personality

issues such as psychodynamic psychotherapy, dialectic behavioral therapy, CBT, etc., or the addition of PDEIs are valuable strategies to address sexual dysfunction.

Substance use disorders: Apart from the direct effect of the substances on the sexual functioning of users, psychosocial (e.g., relationship problems with the spouse, adverse cognitive consequences) and physical complications (e.g., Human Immunodeficiency Virus/Acquired Immuno-deficiency Syndrome, Sexually Transmitted Diseases, neuropathy associated with alcohol use) with them can also precipitate or worsen the sexual disorders (Palha and Esteves, 2008). Sexual dysfunctions, if not adequately managed, can lead to frequent relapses in substance use.

Attaining abstinence from substances through various pharmacological or non-pharmacological means, e.g., family therapy or marital therapy, additional PDEIs, and treating underlying mood or anxiety disorders & co-morbid physical illnesses are cornerstones of management.

Others: Both physical and psychological complications of eating disorders such as body-image distortion, overvalued ideas about sexual activities, and cognitive distortions can result in various sexual dysfunctions (Castellini et al., 2016). Non-pharmacological interventions such as psycho-education about sexuality and systematic desensitization are helpful treatment options for these individuals (Zemishlany and Weizman, 2008).

Table 4: Psychotropics, associated sexual dysfunction, and underlying mechanisms

| Psychotropics | Sexual dysfunction | Mechanism of action (MOA) |
|-----------------|--|---|
| Antipsychotics | <ul style="list-style-type: none"> • Phenothiazines: lower dose: delayed orgasm, higher dose: normal orgasm without ejaculation¹ • Haloperidol: Sexual dysfunction in about 70% of patients and Sexual dysfunctions similar to phenothiazines² • Risp. & palip.: Sexual dysfunction in 60 -70% of patients^{2,3}: ejaculatory problems like retrograde ejaculation⁴ • Olanz. : Sexual dysfunction in >50% of patients priapism⁵ • Clzp. - ED and ejaculation difficulty, disorders of arousal, priapism • Sulpiride/amisul.: Sexual dysfunction prevalence equal to other SGA⁶ • Thioxanthenes: arousal & orgasmic issues⁷ | <ul style="list-style-type: none"> • Hyperprolactinemia d/t Dopamine antagonism : decreased libido • Anticholinergic effects : disorders of arousal • Blockade of peripheral alpha 1 receptor : ED, ejaculation • Block of both alpha 1 and cholinergic receptors : priapism • AP induced sedation and weight gain : reduced sexual desire |
| Antidepressant | <ul style="list-style-type: none"> • SSRIs: high rates of Sexual dysfunctions across all the SSRIs, Higher frequency of Sexual dysfunctions (>30%) with fluoxetine, fluvoxamine, paroxetine and sertraline⁸ • TCA: More common with clomi, amitrp. & imi.; less common with secondary amines (desi., nortryp.) • MAOIs: incidence is 20-42%⁹ • Agomelatine: no significant Sexual dysfunctions⁹ • Bupropion: no significant Sexual dysfunctions¹⁰ • Duloxetine: can affect all stages of sexual cycles. • Mirtaz., rebox., traz., milnacpr., mians. Sexual dysfunctions< SSRIs¹¹ • Venlafaxine - can affect all stages • Vilazodone: can involve all stages but low risk • Vortioxetine: can affect arousal & orgasm¹² | <ul style="list-style-type: none"> • Serotonergic agents: inhibit orgasm • Alpha 1 blockade: DE, Trazodone: alpha1 block: priapism • others: sedation, hormonal changes, disturbance of cholinergic/adrenergic balance, peripheral α -adrenergic agonism, inhibition of NO |
| Mood stabilizer | <ul style="list-style-type: none"> • MHSDD • Anorgasmia (gabapentin) • Li: reports of Sexual dysfunctions with concomitant use of other agents. • CBZ: decreased libido • Ox-CBZ- less likely to be associated with sexual dysfunctions | <ul style="list-style-type: none"> • Lithium: not well understood • Anticonvulsants: lowers free testosterone level due to enzyme induction |
| | <ul style="list-style-type: none"> • Valproate: lower rate of sexual dysfunctions (in male) • Lamotrigine: no data | |

| | | |
|---|--|--|
| Anxiolytics like Benzodiazepines (BZD) | <ul style="list-style-type: none"> Anorgasmia, decreased libido, ED Incidence- not known It can also cause sexual disinhibition (clonazepam) and increased sexual desire (lorazepam) Buspirone: Sexual dysfunctions is rare; reports of reversing Sexual dysfunctions¹³ | <ul style="list-style-type: none"> May be secondary to sedation and excessive muscle relaxation Decreases plasma epinephrine concentrations l/t reduced anxiety, hence can improve sexual function anxiety |
| Opioids | <ul style="list-style-type: none"> High rates of sexual dysfunction ED, premature ejaculation, orgasmic dysfunction, and low libido PME after cessation of opioid use Illicit opioids, e.g, heroin: sexual dysfunctions in 34-85% of pts.¹⁴ OST-mainly decreased libido and orgasmic dysfunctions or ED -MMT: rate of sexual dysfunctions about 14-81%¹⁵ -BMT: rate of sexual dysfunctions about 36-83%¹⁶ Opioid antagonist therapy like naltrexone: Rate of sexual dysfunctions up to 90% (PME, ED, decrease in sexual desire)^{14,16}. Also has evidence of improvement in ED^{16,17} | <ul style="list-style-type: none"> Decreases adrenal androgen (by inhibiting GnRH, and production of LH) Morphine administration suppresses LH release & reduces the levels of testosterone & estradiol, affecting testicular function Development of hypogonadism Effect on gonada-HP-axis through -rec. Improvement in ED may be due to inhibition of the inhibitory effect of endogenous opioid Endogenous opioid delays ejaculation when inhibited by NTx l/t PME¹⁷ |
| Alcohol use | <ul style="list-style-type: none"> Small amount may l/t increased libido or improvement in erection Excessive consumption: affects all stages of the sexual cycle (decreased sexual desire in about 50%, ED in 16-59%, delayed ejaculation in 17-25%, and PME in 4-15%) | <ul style="list-style-type: none"> Reducing anxiety and inducing vasodilation Decrease testosterone, increase estrogen, and polyneuropathy: affects penile nerves Central sedation may lead to transient ED |
| Tobacco use | <ul style="list-style-type: none"> ED | <ul style="list-style-type: none"> Toxicity d/t elevated levels of CO, increased platelet aggregation, & atherosclerotic vessels may also play a role |
| MDMA (ecstasy) | <ul style="list-style-type: none"> Increased desire and satisfaction are more common Delayed orgasm and ED also reported | <ul style="list-style-type: none"> Activation of dopaminergic system attributed to increased sexual desire & satisfaction Stimulation of the serotonergic system: has an inhibitory effect on erection and orgasm |
| Stimulants: amphet, MPH, etc | <ul style="list-style-type: none"> Increased libido Prolonged use may be associated with loss of desire & erection | <ul style="list-style-type: none"> Raise plasma levels of NE and dopamine |
| Alpha & beta rec. antagonists (propranolol) | <ul style="list-style-type: none"> Impotence, decreased volume of ejaculate, and produce retrograde ejaculation, can also affect libido | <ul style="list-style-type: none"> Diminish tonic sympathetic nervous outflow from vasomotor centers in the brain |
| Anticholinergic (benztropine) | <ul style="list-style-type: none"> ED | <ul style="list-style-type: none"> Blockade of cholinergic receptors |
| Antihistaminic | <ul style="list-style-type: none"> Inhibitory effect on sexual function | <ul style="list-style-type: none"> Anticholinergic activity & mild hypnotic agent |
| Hallucinogens (LSD, PCP, etc.) | <ul style="list-style-type: none"> May enhance sexual experience but can also affect sexual function adversely | <ul style="list-style-type: none"> Enhanced sexual experience d/t psychotomimetic effect |
| Cannabis | <ul style="list-style-type: none"> May enhance sexual pleasure prolonged use may impair sexual function | <ul style="list-style-type: none"> Altered state of consciousness Prolonged use decreases testosterone level |

amphet.:amphetamine, Amtrp: amitriptyline, AP: Antipsychotics, BMT : Buprenorphine maintenance therapy, CBZ & Ox-CBZ: Carbamazepine, -: Oxcarbamazepine, Clomi: clomipramine, CO: carbon monoxide, CVDs: cardiovascular diseases, DE : Delayed ejaculation, Desi: desipramine, DM: diabetes mellitus, d/t- due to, ED: Erectile dysfunction, GnRH: Gonadotropin Gonadotropin-releasing hormone, HP: hypothalamic-pituitary, HTN: hypertension, Imi: imipramine, l/t: leading to, LH: Luteinizing hormone, Li: Lithium, LSD -: Lysergic acid diethylamide, MAOIs -Monoamine oxidase inhibitors, MDMA - 3,4-Methyl enedioxy methamphetamine, MHSDD: Male hypoactive sexual desire disorder, mians: mianserin, milnacpr: milnacipran, Mirtaz: Mirtazapine, MMT -: Methadone maintenance therapy, MPH: methylphenidate, NO: nitric oxide, Resp.: risperidone, nortryp: nortryptiline, NTx: naltrexone, NE: Norepinephrine, Olanz:olanzapine, Clzp:clozapine, OST: Opioid substitution therapy, palip: paliperidone, PCP -: Phencyclidine, , PME: Premature ejaculation, RCTs: Randomised control trials, rebox: reboxetine, SD: Sexual dysfunction,SGA - Second generation antipsychotics, SNRI: Serotonin and norepinephrine reuptake inhibitors, SSRIs: Selective serotonin reuptake inhibitors, TCAs: Tricyclic antidepressants, traz: trazodone

| | | | |
|-----------------------------|--------------------------|-------------------------------|----------------------------|
| 1.Smith, 2003 | 6.Peluso et al., 2013 | 10.Reichenpfader et al., 2014 | 14.Grover et al., 2014 |
| 2.Serretti and Chiesa, 2011 | 7.Aizenberg et al., 1995 | 11.Cleare et al., 2015 | 15.Nik Jaafar et al., 2013 |
| 3.Montalvo et al., 2013 | 8.Sadock et al., 2017 | 12.Wagner et al., 2018 | 16.Ramdurg et al., 2012 |
| 4.Raja, 1999 | 9.Montejo et al., 2018 | 13.Gitlin, 2003 | 17.Sathe et al., 2001 |
| 5.Dossenbach et al., 2006 | | | |

Table 5: Management of sexual dysfunctions with co-morbid psychiatric/medical illnesses

| Co-morbid disorders | Common sexual disorders | Management |
|---|---|--|
| Physical Illness | | |
| <p>Cardio-vascular disorders Hypertension Atherosclerosis</p> | <p>ED is a common problem & heralds the onset of CVDs 5 -10yrs in advance.</p> | <ul style="list-style-type: none"> • PDEIs (e.g., sildenafil, tadalafil) are preferred if BP>90/60mmhg. • Nitrated are contraindicated with PDEIs • Antihypertensives: Cardio selective beta blocker (metoprolol, atenolol, etc.) are preferred over non-selective beta blockers • Adequate control of glucose (if DM is co-morbid), lipids (hypo-lipidemic agents), and weight (lifestyle modifications). |
| <p>Neurological diseases Traumatic brain & Spinal cord injury Multiple sclerosis Peripheral neuropathy Stroke</p> | <p>ED is a common problem. TBI: decreased desire d/t reduced gonadotropins Decreased genital sensation & painful penetration common with MS</p> | <ul style="list-style-type: none"> • PDEIs are less effective • A vacuum tumescence device may be used • Intracavemous papaverine, phentolamine • Penile implant: however, associated with complications, results in poor response to other treatments • Testosterone supplements & lubricants • lubricants may be useful. • Early physical rehabilitation, nutritional support, addressing emotional & cognitive issues • For hyperprolactinemia (Rt. Cerebral damage): Dopamine agonist (ropinirole) |
| <p>Endocrinological diseases DM Androgen deficiency Hyperprolactinemia Hypothyroidism</p> | <p>EDs are secondary to peripheral neuropathy. Body-image distortions. Decreased libido & EDs are common. Abnormal ejaculations are common</p> | <ul style="list-style-type: none"> • PDEIs are useful • cognitive behavioural therapy • Interpersonal issues with the partner: couple therapy, family psychoeducation • Testosterone replacement therapy. • Tt: Dopamine agonist, surgical removal of the pituitary tumours • Emphasis on achieving euthyroid |
| <p>Genito-urinary conditions Prostatitis, Peyronie's ds. Chronic renal failure</p> | <p>ED is common Depression is common, fear & anxiety related to worsening of medical condition with sexual activity</p> | <ul style="list-style-type: none"> • Treat the underlying infection or inflammation • Can result in ED, painful penetration, & ejaculatory problems: PDEIs & other non-invasive treatment, surgery should be attempted if former Tt fail. • Continue coital activity as spontaneous remission is likely • Hormonal and metabolic abnormalities: correct the deficiency • CBT, relaxation exercises, antidepressants -if indicated |

| | | |
|--|---|--|
| <p>Others: Metabolic syndrome</p> | <p>-</p> | <ul style="list-style-type: none"> • ED and decreased desire are common: • Lifestyle modifications (Mediterranean diet, Smoking cessation) • PDEIs for ED ; testosterone replacement therapy (TRT) & aromatase inhibitors (e.g., Letrozole) to correct hypogonadism. • Bariatric surgery for obese individuals not responding to medical and psychosocial treatments. • Intra-penile prosthesis |
| Psychiatric illness | | |
| <p>Mood disorders (Depression, Bipolar Ds.)</p> | <p>Depression: Decreased libido</p> | <ul style="list-style-type: none"> • SSRIs, TCAs, & MAOIs, are detrimental to sexual functioning • Mgt.: decrease dose of antidepressants, drug holiday (for shorter-acting agents), • Cyproheptadine (4-12mg): 5HT_{2A} antagonist (1-2hrs before the act) & Nefazodone (5HT_{2A} antagonist) • Mianserin (5HT_{2A} & alpha-2 antagonist), • Buspirone (5HT_{1A} agonist) 15-60mg • Dopamine agonist: Bupropion • PDEIs: Sildenafil (25-50mg OD) |
| <p>Anxiety spectrum disorders (Generalized anxiety ds, social anxiety ds (SAD) PTSD, OCD, etc.)</p> | <p>Significantly affect all stages of the sexual cycle SAD (e.g., performance anxiety): ED & PME are widespread. PTSD: ED & PME are common.</p> | <ul style="list-style-type: none"> • Anxiolytics (e.g., clonazepam) used in PTSD can worsen sexual functioning • Mgt.: PDEIs, non-pharmacological intervention: psychodynamic psychotherapy, CBT/BT for performance anxiety and other anxiety Ds. • Psychotropic agents: buspirone & mirtazapine are preferable agents |
| <p>Schizophrenia and psychotic ds.</p> | <p>- Affects all stages of sexual functioningd/t -decrease DA -anticholinergic & antiadrenergic effects</p> | <ul style="list-style-type: none"> • FGA>SGA (CLZ>RISP> OLZ & QUET) • General principles: switch to a lower dose, prefer SGA over FGA, couple/marital therapy for psychological issues • PDEIs are less effective |
| <p>Personality disorders</p> | <p>Borderline-narcissistic PD</p> | <ul style="list-style-type: none"> • Interpersonal therapy, DBT • PDEIs |
| <p>SUD (opioids, alcohol, MDMA, etc.)</p> | <p>Can affect all stages of the sexual cycle.Can l/t risky behaviour, including contracting HIV, STDs</p> | <ul style="list-style-type: none"> • Treat the underlying SUD • Use medications as highlighted above if symptoms do not get improved with abstinence of substance or when symptoms are severe |
| <p>Others: Eating disorders</p> | <p>Body-image distortion Negative self-evaluation, co-morbid depression</p> | <ul style="list-style-type: none"> • Psychoeducation about sexuality , systematic desensitization, etc. |

CLZ: clozapine, DBT: dialectic behaviour therapy, FGA: first-generation antipsychotics (e.g., haloperidol, trifluoperazine), HIV/AIDS: human immunodeficiency virus/acquired immunodeficiency disorders, MAOI: monoamine oxidase inhibitors, MHPs: mental health professionals, OLZ: olanzapine, PDEIs: phosphodiesterase inhibitors, PTSD: posttraumatic stress disorders, QoL: quality of life, QUET: quetiapine, RISP: risperidone, SGA: generation antipsychotics, SSRIs: selective serotonin reuptake inhibitors, STDs: sexually transmitted disorders, TCAs: tri-cyclic antidepressants

Conclusion

Sexual dysfunctions are frequently seen with psychiatric as well as physical illnesses. Medications, both psychotropic, e.g., selective-serotonin-reuptake inhibitors, antipsychotics (first-generation>second-generation), and non-psychotropic, e.g., beta-blockers, thiazide diuretics, are equally implicated in sexual dysfunctions. Treating underlying co-morbid illnesses, reducing/discontinuing the offending drugs, including psychoactive substances, switching to an agent with less sexual adverse effects, and using medications (e.g., phosphodiesterase inhibitors), devices (prosthesis), and surgery (implants, correction of genito-urinary conditions) are the cornerstone of management. Better knowledge and understanding of sexual dysfunction among co-morbid psychiatric or physical illnesses, adequate assessment, and formulation of a comprehensive treatment plan are key to addressing these comorbidities.

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Review Article

Trends of sexual dysfunction among men: Existing policies across the globe and need for policies in the Indian context

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Abstract

Male sexual dysfunction (MSD) is considered taboo among people worldwide. In males, it comprises very complex physiological processes, including loss of libido, erectile dysfunction, premature ejaculation, delayed ejaculation, or no ejaculation, etc. Very little attention has been paid to male sexual health due to certain cultural beliefs that hold people from seeking medical attention at times of need. Issues related to sexual health should be recognized and addressed properly. Although several guidelines are available for the same, they are limited in scope. Health care practitioners need to be trained adequately in treating conditions related to sexual health, especially in men. New policies should be implemented for affordable healthcare and financial insurance for such treatments. Every window of opportunity should be utilized to spread awareness about the utility and benefits of modern non-pharmacological, medical and surgical strategies for MSD.

Keywords:

Sexual health, Male, India, Dysfunction, Policy

Introduction

According to the World Health Organization, the current working definition of 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” (World Health Organization, 2017). Male sexual dysfunction can be described as any physical complaint that further turns into the inability to perform a sexual act; it comprises very complex physiological processes. Sexual dysfunction is a general term that can be explained by other terminologies such as erectile dysfunction (ED), premature ejaculation, loss of libido or failure of sexual ejaculation and delayed ejaculation (Chen et al., 2019).

The function of the male sexual system involves the coordination of the nervous, cardiovascular,

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endocrine, and reproductive systems. When the normal rhythm of these functions, as mentioned above, is altered, it causes certain ill effects on the normal sex life. The male reproductive system being sensitive is easily affected by many risk factors, such as chronic diseases (diabetes, cardiovascular diseases, chronic kidney disease, hyperlipidemia, and reproductive cancers), environmental pollution, drug toxicity, unhealthy lifestyle, smoking, alcohol consumption, etc., (Bairagi et al., 2011; Caretta et al., 2013; Chen et al., 2019 and Edey, 2017). Anti-hypertensive drugs, clofibrate, cimetidine, digoxin, anti-cancer drugs, and various hormonal agents have been linked to sexual dysfunction in males (Chen et al., 2019).

Male sexual dysfunction (MSD) is a common term used to refer to different conditions like erectile dysfunction (ED), premature ejaculation (PME), hypogonadism, delayed or inhibited ejaculation, loss of libido, etc. Sexual dysfunction is common among men of all ages, races and ethnicity. Studies show that 15% of couples are affected by sexual dysfunction due to male trends worldwide (Chen et al., 2019). Currently, the exact cause of MSD is not well understood in the literature.

MSD is considered a taboo among people worldwide. People with sexual health-related problems are looked down upon and judged for illicit sexual activity and poor genital hygiene. Various cultures and societal beliefs hold back people from seeking the required medical attention when in need. Issues related to sexual health are poorly recognized and addressed in India, and the health care practitioners are trained inadequately in treating conditions related to sexual health, especially in men. There is very little attention drawn to male sexual health compared to women (Singh et al., 2018). Access to specialists such as urologists, andrologists, and sexologists, is more commonly found only in the urban setup than in rural areas (Singh et al., 2018).

The rationale

The review paper covers the trends of MSD, existing policies, and policies required on male sexual dysfunction across the globe, with a

special focus on India and South Asia. The study also analyses why men with ED complain of higher rates of absenteeism, presenteeism (impairment while present at work), and loss of work productivity than normal men. It also aims to investigate the need for policies on male sexual health and MSD to bring the attention of policymakers in developing countries.

Prevalence

Male sexual dysfunction can affect men of all age groups, but the incidence increases with age. Over 152 million men were affected with SD in 1995, and it is estimated that by 2025 the incidence count will increase to >320 million worldwide (McKinlay, 2000; Ayta et al., 1999).

The prevalence of male SD has increased very rapidly, and various factors play major roles in it, due to which the incidence varies in different countries. In Asian countries, the incidence varies from 0% to 95% in <60 years of men, while in European countries, this varies from 0.9% to 88.8% (Irfan et al., 2020). The main reason behind this is the difference in lifestyle and cultural practices in countries on both sides. In Asian countries, the problem is more prevalent, and incidence remains untreated compared to European countries due to cultural and traditional beliefs, the prevalence of old medicinal practices, social stigma, etc. (Ho et al., 2011). In some Asian countries, a sexual discussion is still treated as taboo, and thus it plays a major role in increasing incidences of complaints.

Compared to the cases recorded in the whole world, southeast Asian countries only contribute to 22% of the population with the complaint of erectile dysfunction (Lewis, 2013). The issue of sexual health is related to social and cultural norms; thus, the incidence of male SD varies in all the countries of the same continent. Also, the incidence of different sexual problems differs in all Asian countries. In Thailand, 37.5% of men suffer from ED and 23% from premature ejaculation (Kongkanand, 2000), which has increased to 42.8% compared to the year 2000. The highest cases were seen in unemployed men (78.51% of 2,269 interviewed) (Permpongkosol

et al., 2008). The scenario is changing in Southeast Asian countries as the patients discuss these complaints with their spouses and family members. Also, they are coming forward to discuss this with medical practitioners. As a result, in Malaysia, 81.5% of cases of SD are self-reported by the patients to the out patient department (Nordin et al., 2019). In Malaysia, 26.8%-69% of males suffer from ED, 22.3% males from premature ejaculation, and 18.5% from hypogonadism (Ho et al., 2011; Khoo et al., 2008). In Singapore, 51.3%-73% of men suffer from ED and 12% from premature ejaculation (Chin, 2002; Tan et al., 2003).

In China, the incidences of different male SD vary in separate regions as in Mainland China, the incidence of ED is 38.3%, and premature ejaculation is 19.5% (Tan et al., 2003). The ratio differs in rural areas of Mainland China (Lau et al., 2005), While in Taiwan, 9%-17% of men suffer from ED and 13% of men from premature ejaculation (Chen et al., 2004), and in Hong Kong prevalence of ED is 63.6% and premature ejaculation is 24.7% among men (Lau et al., 2005).

In the northern part of India, 81% of men suffer from at least one sexual complaint (Singh et al., 2018), while in south India prevalence of ED is 43.5%, premature ejaculation is 10.9%, and 0.38% with an orgasmia and 0.77% with hypoactive sexual desire disorder (Sathyanarayana Rao, 2015).

Literature review

Ian Peate, in 2005 stated that adverse effects of smoking in a smoker could be seen throughout his life, affecting sperm count, diminishing reproductive health, male impotence, etc. (Peate 2005).

In 2007, a study on Asian men's thinking towards life events was conducted on 10934 adult men 20 to 75 years of age. They found out that 6.4% of them suffered from ED, and the prevalence was higher as age increased. These studies showed that most men would not seek treatment, and those who sought treatment preferred to take treatment from specialized doctors abroad rather than locally trained doctors. Those who were

ready for treatment cited their main reason for treatment as the influence of their spouse (Tan HM et al., 2007). Michael S Sand also did a study in 2008 called Men's Attitudes to Life Events and Sexuality (MALES), taking a sample size of 27,839 men between 20-75 years of age from 8 different countries (United Kingdom, Italy, Mexico, Brazil, Spain, France, Germany, and United States) and found out that most of the male population defines masculinity as others sees them as being self-reliant, honourable, and being respected by their friends.

On the other hand, factors such as being physically attractive, sexually active, and successful with women were not on the list of important factors of masculinity. Also, they put more importance on a good job and a nice home rather than having good health or having a harmonious family as an important factor for the quality of life. These factors are not different in both the categories of men, whether with or without erectile dysfunction (Sand et al., 2008). In 2011, Polinski and Kesselheim stated that higher prices and treatment costs with lack of reimbursements led to a change in decisions for treatments instead of other public's moral attitude towards sexual performance (Polinski and Kesselheim, 2011). Affordable health care or health insurance would encourage an individual for proper treatment.

In 2019, Idweze et al. stated that the main reason for increasing incidences of male infertility in Nigeria might be the excessive use of sex enhancement herbs that contain a high amount of lead and cadmium. These metals are responsible for both chronic poisonings and infertility among men (Idweze et al., 2019).

Taylor, in 2019, stated that erectile dysfunction is often untreated or insufficiently treated, and by 2025 it will be prevalent among 300 million population worldwide. The main reasons behind untreated ED are either social stigma or poor communication between health care workers and patients. Thus pharmacists can play a major role in the treatment of ED through strategic promotion and support of professional pharmacists who will help the aging population (Taylor et al., 2019).

Factors affecting and co-morbidities

Sexual dysfunction is not a single complaint but a term used for a group of complaints such as ED, early or delayed ejaculation, hypoactive sexual desire disorder, arousal disorder, anorgasmia, and many more. The incidence of sexual dysfunction is increasing worldwide due to changing lifestyle patterns, stress, the burden of work pressure, and changing social norms. The condition was more prevalent in India due to old practices and community beliefs. Men will not discuss the complaints in public or with family and medical practitioners as it was termed taboo. There are many factors responsible for this condition, which are as follows:

- ♦ **Age:** Age plays an important role in terms of sexual dysfunction. As age increases, the prevalence of MSD increases subsequently (Ayta et al., 1999, Ho et al., 2011; Hendrickx et al., 2016). In the case of erectile dysfunction, the incidence increases with age (Landripet, 2015). In the case of Asia, as age increases, sexual satisfaction also increases (Kim and Jeon, 2013; Moreira et al., 2006). While in the case of other countries, the ratio is different (Castellanos-Torres et al., 2013).
- ♦ **Socioeconomic and employment status:** Men with lower socioeconomic status have higher incidences of sexual dysfunction. Due to lower socioeconomic status, excess stress, lifestyle changes, poor access to the health care system, and other associated factors play an important role (Çayan et al., 2017).
- ♦ **Health literacy:** In individuals with insufficient health literacy, protection of normal health, compliance to treatment, and accurate, timely diagnosis are difficult. As literacy levels increase about ED due to systemic conditions such as diabetes and heart disease, it will be more important to individuals, leading to early medical help and an on-time diagnosis of the primary conditions (Demirbas et al., 2021).
- ♦ **Accommodation:** Residential area does not play a significant role in incidences of MSD but is important along with other factors (Carvalho et al., 2014). In developing countries, more of the population lives in slum areas; thus, the incidence of MSD is more prevalent in such countries.
- ♦ **Marital status:** In Asian men, higher incidences of MSD are prevalent among unmarried men rather than married men (Quek et al., 2008).
- ♦ **Addiction:** Incidence of MSD is more in men addicted to alcohol, cigarettes (Peate, 2005), and tobacco smoking (Ho et al., 2011; Kongkanand, 2000; Ghalayini et al., 2010).
- ♦ **NCDs:** Increased percentage of MSD incidence is more with the presence of any other morbidities such as patients with diabetes mellitus the prevalence of MSD increases (Huang et al., 2014). The incidence of MSD is more prevalent with the patients of any mental complaints. In men with complaints of anxiety and depression, the incidence of early erectile dysfunction increases (Jern et al., 2012). Men with prostatitis have shown a higher incidence of MSDs (Permpongkosol et al., 2008; Cayan et al., 2017). Patients with urinary tract diseases show more prevalence of sexual dysfunction (Tang et al., 2015).
- ♦ **Cultural beliefs:** Many men pay more importance to a good career and economic stability than good sexual, physical, and mental health. This also results in an alternating prevalence of MSD in Asian countries (Tan et al., 2007). Also, the fear of getting bullied in social life leads to hesitation in seeking required medical consultation.
- ♦ **Religious beliefs:** Religious beliefs are one of the important factors that help determine whether a sexually dysfunctional person will seek medical assistance and early treatment from a professional doctor or sex therapist. These religious beliefs may act as a resistance force towards required treatment and influence early treatment dropout (Simpson et al., 1992).
- ♦ **Dietary factors:** The healthy dietary patterns have been associated with a decreased risk for ED in a recent study by Bauer et al. They have emphasized the consumption of healthy vegetables and fruits, including various nuts, legumes, and fish, among other sources of long-chain fats, with avoiding of processed

and red meats (Bauer et al., 2020). Inconsistent associations between intake of alcohol and ED have been observed in a prospective cohort (Ramírez et al., 2016).

The complaint of MSD is widespread due to a lack of proper knowledge of the issue. The issue is bigger in developing or third world countries due to their religious and community beliefs and practices. In Asian men's terms, masculinity is defined by having a good and promising career, performing well in their jobs, having more friends who praise them, leadership roles in the community, being bread owner of the society and thus, they used to pay less attention towards other important issues for happy and healthy life such as healthy lifestyle, exercise, good mental, physical and sexual health, good performance with partners. This was the main issue in Asian countries that despite the huge prevalence of MSD, there were fewer recorded cases in health care sectors. This is the belief that they carried for centuries. Instead of going to certified medical practitioners for the treatment of their complaints, Nigerian men would consume traditional drugs and medications rich in poisonous substances such as mercury and copper, which can cause chronic poisoning to them (Igweze et al., 2019). While the scenario in other parts, such as some European countries, is different, men recognize sexual complaints as an important part of their health care system. They can openly discuss it (Irfan et al., 2020).

In developing and third-world countries, poor access to primary health care services plays a major role in many disorders. In the case of male sexual dysfunction, this scenario also plays a major role. Due to less accessibility to basic health care services, the incidence of MSD remains untreated (Tan et al., 2007). Providing basic treatment for MSD costs up to 1 billion dollars worldwide (Polinski and Kesselheim, 2011). There is a major necessity for policies on MSD in the community and the pharmaceutical industry, which also plays a major role in treating MSDs. Due to increasing awareness about the complaints and drugs related to it, such as viagra, the prevalence of MSD is decreasing as people are coming forward and discussing the topic and asking for treatment which is a ray of hope

(Taylor et al., 2019 and Ho et al., 2011). However, a major portion of the population still is unaware of the issue and its importance.

Due to all these factors and social norms, this is a major problem prevalent in the world, and it is very difficult to fight against it, but by good policies, awareness, and strengthening of our health care services, we can face it.

Guidelines for prevention

The Diagnostic and Statistical Manual of Mental Disorders Fourth Revision (DSM-IV) clearly states that related clinical judgments should consider individual's ethnic, cultural, religious, and social backgrounds (Segal, 2010). These facts undermine the need for proper guidelines that focus on the specific needs of Indian patients, rather than focusing alone on pharmacotherapy, but also the soft and hard skills required for counseling patients. However, no such comprehensive guidelines addressing the issue of sexual counseling exist. In contrast, various attempts have been made toward standardizing the pharmacological practices in certain forms of MSD all over the globe.

The guide on a diet for ED recommends that eating a healthy diet that includes fruits, vegetables, whole grains, olive oil, nuts, and fish, such as the Mediterranean diet, can help treat ED. When an individual follows a healthy diet plan, it helps the body keep working in order and helps maintain the right body weight, optimum sugar levels in the blood, and helps decrease blood level damage. Diet and good lifestyle habits like regular exercise, no smoking, and managing depression are important to maintain good health (Erectile Dysfunction Food and Diet Guide 2021 by IASH India).

Acute Ischemic Priapism: An AUA/SMSNA guideline states the role of imaging, adjunctive laboratory testing, early involvement of a specialist urologist while presenting to the emergency room, improves the use of conservative therapies, enhances data for counseling on risks of ED and surgical complications if any, and inclusion of latest and standard surgical techniques and if required, easy

prosthesis placement (Bivalacqua et al., 2021). European Association of Urology guidelines on priapism states that ischaemic priapism is the most common and idiopathic form which is usually seen after blunt perineal trauma. It is an emergency condition that needs intervention within 4-6 hours, including decompression of the corpora cavernosa by aspiration and intracavernous injection of sympathomimetic drugs (Mottet, 2021).

Guidelines for treatment

European Association of Urology (EAU) guidelines state that erectile dysfunction is highly prevalent, and 15-20% of men have severe ED. Erectile dysfunction and cardiovascular disease share common risk factors (Hatzimouratidis et al., 2021). The diagnosis of ED is made by recording medical and sexual history and validated questionnaires. The treatment includes phosphodiesterase type 5 inhibitors (PDE5-Is), including sildenafil, tadalafil, and vardenafil. These have high efficiency and safety rates, even in difficult to treat patients with diabetes mellitus. Patients who do not respond to PDE5 inhibitors are administered intracavernous injections, vacuum constriction devices, intraurethral alprostadil, or implantation of a penile prosthesis. The penile prosthesis has a 20-30% prevalence (Hatzimouratidis et al., 2021). In contrast, guidelines for treating ED issued by the Journal of American Medical Association state that three different therapies, including vacuum constriction devices, vasoactive drug injection therapy, and penile prosthetic implants, are effective.

ALLIANCE guidelines (Kalra et al., 2013) are an exhaustive coverage of the counseling and related non-pharmacological methods used to treat MSD. It is a multi disciplinary team of experts who guide counseling in sexual dysfunction to healthcare professionals. Various concepts of medical care that are provided include the bio-psychosocial model, therapeutic patient education, patient and couple care, shared decision making, minimizing the discomfort of change, and coping skills training. This includes counseling the patients regarding the required investigations, physical activity, and yoga. The

ALLIANCE guidelines also discuss the cognitive behavioral therapy, couple and family centered therapy in details, along with the pharmacological, device, and invasive therapy. These conclude with an emphasis on enhancing community awareness of MSD. These guidelines serve as a comprehensive, updated composition of evidence and experience for healthcare professionals working with MSD patients.

Existing policies

American Urological Association (Erectile dysfunction: AUA guideline, 2018)

1. Men with ED symptoms should have a complete medical, sexual, and psychological history and a physical examination, and selected laboratory tests. (Clinical Concept)
2. Validated questionnaires should be used to assess the severity of ED, monitor therapy effectiveness, and guide future management for males with ED. (Expert Advice)
3. Men should be informed that ED is a risk factor for underlying cardiovascular disease (CVD) and other health problems that should be evaluated and treated. (Clinical Concept)
4. Morning serum total testosterone levels in males with ED should be tested. (Moderate Recommendation; Grade C Evidence)
5. Specialized testing and evaluation may be required for some men with ED to guide treatment. (Expert Advice)

American Academy of the Family Physician (Rew and Heidelbaugh, 2016)

The American Academy of Family Physicians also states that oral PDE5-Is are the firstline of treatment for ED. Second-line of treatment includes alprostadil and vacuum devices. Surgically implanted penile prostheses are an option when all other options are ineffective (Najari & Kashanian, 2016).

Sexual dysfunction is a significant health issue in males though it is not new as it has been prevalent for 5000 years as per the Egyptian literature (Shamloul and Ghanhem, 2013; Shah, 2005). It

affects the personal, marital, and social life of the individual, which can be both cause and effect at the same time. Therefore, male sexual dysfunction needs to be understood from the bio-psycho-social perspective and requires a multi-dimensional approach to dealing with it. It helps in the holistic management of male sexual dysfunction. Despite having several guidelines for the management of MSD, their scope is limited, as they focus predominantly on ED and premature ejaculation. However, they do include the investigations and pharmacological aspects in detail; sexual counseling and gloss over the soft skills required for sexual dysfunction management are not explained. Since these guidelines are developed as per the western population, a few of the unique features and challenges of South and West Asian andrology are not addressed.

A few recent studies have highlighted the differences between Asian and North American populations affected by MSD (Kalra et al., 2013). The lower reported rates of ED in these populations could be attributed to a better lifestyle or the patient's lack of willingness to disclose. Future research needs to look at this. It is also likely that these people's reliance on complementary and alternative medicine to improve their sexuality leads to MSD not being reported. Another cause could be Asian men's poor health-seeking behavior. Patients from India and other Asian countries frequently have high expectations of their medical providers, such as a more robust male personality capable of maintaining a close relationship through dialogue while providing competent therapeutic intervention.

Furthermore, acceptable body language and physical contact may differ across cultures. What may seem like a threatening physical touch to an American patient might be assumed as a friendly gesture by an Asian patient. Thus, due to all the causes and factors prior, sexual health was ignored by both males and females. However, after awareness and prevalence of STDs such as HIV, the importance of sexual health and sexual hygiene is being accepted and acknowledged by the populations worldwide. Still, apart from the complete acceptance, there is a long way to go as we need to acknowledge the problem on higher governance levels. Some important policies need to be framed worldwide to tackle the situation.

Conclusion

MSD may be an individual's problem or a couple's internal matter. Sexual dysfunction affects an individual's normal functioning and health in multiple ways and may lead to significant psychological and psychiatric issues if not managed well. Untested treatments supplied by unqualified practitioners must also be made more widely known due to a lack of evidence and the possibility of risk, discomfort, and harm. Future advancements in ED care are likely to keep pace with ongoing progress in the field of sexual medicine. Counseling is a fundamental and essential aspect of management because no medical or surgical therapy is complete without it. Sexual counseling is a difficult task that involves both in-depth knowledge of soft skills and an extensive understanding of hard skills. In patients with MSD, inadequate counseling may also reduce the efficacy and efficiency of pharmacological or invasive therapy.

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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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Review Article

Non-pharmacological interventions for male sexual dysfunctions

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Introduction

Male sexual dysfunctions are commonly seen in clinical practice and the community. However, many patients are often embarrassed and significantly delay seeking medical advice (Bancroft and Janssen, 2000). Men's sexual disorders are classified as disorders of desire, arousal (erectile dysfunction), or orgasm (premature or delayed ejaculation, or anorgasmia) as per the sexual response cycle, though there is considerable overlap and concurrence across these disorder groups (Hatzimouratidis and Hatzichristou, 2007).

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Abstract

Male sexual dysfunctions are common conditions encountered in general as well as special clinics. However, their clinical recognition, proper diagnosis, and management remain delayed due to several factors related to patient and clinician. Currently there are several effective and useful treatment strategies for male sexual dysfunctions. Psychoeducation, couple therapies, mindfulness-based strategies, directed masturbation, Kegel exercise, start-stop technique, squeeze technique and using psychological interventions, and lifestyle intervention are some of the techniques employed to manage male sexual disorders. The evidence base for many non-pharmacological techniques is far from convincing. However, they are often utilized in clinical scenarios empirically.

Recent improvements in the understanding of the anatomy, physiology, and pharmacotherapy of Male Sexual Dysfunctions (MSD) have resulted in better outcomes and improved the quality of life in such patients.

Despite this high prevalence, male sexual dysfunctions are often under diagnosed in clinics, and several patient-related and physician-related barriers have been reported to contributing to this situation (Bancroft and Janssen, 2000). For example, individuals are usually hesitant to initiate dialogues about their sexual dysfunctions because of the embarrassment and shame associated with these disorders. Physicians tend not to inquire about MSD due to their limited awareness (Hatzichristou et al., 2016). Treatment decisions in MSD should be based on the physician's assessment of each patient's requirements and an accurate diagnosis. This article provides a classification and management algorithm and is mainly focused on the 'Biopsychosocial' treatment of sexual dysfunctions.

The article has been organised according to the following most important concepts related to the management of MSD.

1. Dual control model
2. Psychoeducation
3. Psychological therapy
 - a. Couple therapies
 - b. Mindfulness-based strategies
 - c. Directed masturbation
 - d. Kegel exercise
 - e. Start-stop technique
 - f. Squeeze technique
 - g. Mixing with lifestyle intervention

Dual control model

The dual control model of sexual reaction is based on the assumption that an individual's sexual response results from a balance of excitatory and inhibitory processes (Janssen and Bancroft, 2007). It is a theoretical model. A significant number of previous studies have shown that excitatory and inhibitory systems operate somewhat independently of each other. Their sensitivities to the response from various modifiers vary from person to person. The variations in responsiveness for excitatory and inhibitory stimuli can explain the inter individual variability of the sexual responses during the normalcy and in a disease state. The researchers compare it to having both an accelerator (excitation) and a brake pedal (inhibition) in a car. In any given sexual scenario, each person will use one or both pedals to varying degrees, depending on their sexual physiology, history, and personality.

Sexual risk-taking, adultery, sexual aggression, sexual compulsivity, the effects of mood on sexual desire and response, and even sexual happiness and compatibility in couples have all been explained using the Dual Control Model (Janssen and Bancroft, 2007; Bancroft et al., 2009). Understanding and accepting the dual control model can be utilized to manage sexual dysfunctions. The couple and individual can conceptualize their own and partners' sexual exciters and inhibitors, and interventions can be

planned so that factors likely to contribute to the sexual dysfunctions can be effectively managed. Incorporating a dual control model in the treatment strategy allows subjects to understand their sexuality more objectively. The therapist can maneuver the management strategy as per the actual need of the couple and individual.

The process could be understood broadly as an adaptive pattern where the sexual response is inhibited if it is recognized as distracting and in situations where continuing an activity could be disadvantageous or hamper the person in responding to other salient stimuli. If the situation and stimuli favor the excitatory response, the activities are carried out accordingly. The outcome depends on the process favoured over the other one (Bancroft and Janssen, 2000; Hatzimouratidis and Hatzichristou, 2007). Individuals differ in their predisposition for excitation and inhibition; for example, those with an unusually high propensity for excitation and a low propensity for inhibition are more likely to engage in problematic sexual behaviour, whereas those with a low propensity for sexual excitation and a high propensity for sexual inhibition are more likely to have sexual response impairment. The effects of these stimuli are mediated by psychological and neurophysiological characteristics of the people involved and other factors like genetics and early learning. Sexual arousal is triggered by the interaction of excitatory and inhibitory stimuli. The effects of these stimuli are mediated by psychological and neurophysiological characteristics of the people involved and other factors like genetics and early learning (Hatzichristou et al., 2016).

The non-pharmacological treatments utilised in managing sexual disorders have evolved over a while. Non-pharmacological treatments are offered to individuals according to their needs, relationship status, psychological mindedness, ability to invest time and efforts during the treatment process, and willingness to go through psychological changes needed to implement the treatment. The following treatment strategies are commonly used.

Psychoeducation

Sex education/psychoeducation is the first step in the therapy of any sexual disorder. By providing factual information, sex education should normalise the individual's experiences and lessen anxiety associated with sexual acts (Nyandra and Suryasa, 2018). Even though all areas must be covered, extra attention must be paid to those directly relevant to the patient's problem. The couple/patient may also be given reading material in some circumstances. This aspect of using books in therapy is called bibliotherapy. Sex education and relaxation training will take place across several sessions. In most cases, psychoeducation may be completed in four sessions (Hatzimouratidis and Hatzichristou, 2007; Emanu et al., 2018).

Sexual myths and misconceptions are common and constitute an important cause of sexual dysfunction in several cases. Various factors influence common beliefs and attitudes about sexuality in individual life. Culture, society, peer group, opportunities for sexual information, media, and parental comfort in discussing issues related to sexuality are important factors related to the development of beliefs and attitudes related to sexuality.

Inappropriate sexual beliefs or misconceptions might cause problems in a relationship for some people. People develop expectations for what sex should be like and how they or their partners' should act. Unrealistic or inappropriate expectation brings failure to full fill them. It leads to difficulties in sexual functioning and some cases, may lead to sexual dysfunction. One of the goals of sex education is to assist the individual and his or her partner in changing any sexual beliefs interfering with their enjoyment of sex. Some are equally applicable to men and women, while others are more pertinent to one gender than the other (Emanu et al., 2018). Other components of psychoeducation include imparting basic knowledge about sexual anatomy, physiology, normal sexual response cycle, and stages of sexual intercourse. Discussing important aspects of proper communication of needs and desires between partners and understanding normal variations in frequency and extent of sexual desire also holds

an integral part of psychoeducation (Blycker & Potenza, 2018).

Couple therapies

Masters and Johnson pioneered a new form of therapy (Dual Sex Therapy- DST) to treat various sexual dysfunctions based on their experiments and research (LoPiccolo and LoPiccolo, 2012). Couple therapy is more rapid, more group-oriented, and shifts the focus onto both partners in the relationship. It has been reported to be more successful in overcoming sexual dysfunctions than earlier employed forms of therapeutic interventions for sexual dysfunctions. Men often have limited experience with a frame of reference relevant to female sexuality, and they have little understanding of the subjective components of female sexual function. Women frequently lack an understanding of the subjective aspects of male sexual functioning or the intensity of most men's ego involvement with their sexuality.

In dual sex therapy, both partners are first assessed for any medical comorbidity. Individual treatment sessions with a therapist of the same gender follow. Following this therapy session, each couple is separately interrogated by an expert of the opposing gender. Then, all four therapy group members debate the possible causes of the problem and treatment options. For 18 sessions, this technique would be repeated three times a week. Assessment of both individuals separately as well as individually, psychoeducation, and the implementation of specialised treatments are all steps in couple therapy.

Dual Sex Therapy (DST) aims to improve healthy communication between partners related to sexuality, expand the sexual repertoire of the couple, improve awareness related to sexual excitement, reduce judgments, and avoid critical comments on each other performances during sexual acts. The success versus sabotage mindset related to achieving perfect sexual intercourse with mutual orgasm is altered and sex is considered a mutually pleasurable act without any yardstick to measure the success of the act. It helps in improving intimacy, sexual confidence as self and couple.

The following steps are followed during the therapy.

a. Non genital and genital sensate focus- The aim of this part of therapy is to focus on sensuality rather than sexuality. The partners caress each other by turn hence both partner plays active and passive roles respectively. Touch using hand and other body parts including oral stimulation (involving lips, teeth and tongue) is encouraged. Additional materials like cloths, feathers, scented candles, special pillows etc can be used to enhance pleasure and as an add on to the enhancement of sexual stimulation. This allows exploration of partners body and experiencing feeling during active and passive roles during the therapy. This stage helps in increasing familiarity with each other's body, to experiment with different types of touch and own sensations during sexual excitement. The strategy is done for non-genital areas first followed by inclusion of genital areas after several session. Sexual intercourse is banned during these stages. This allows partners to get rid of performance anxiety as pressure of the performance is taken away. Partners are encouraged to give verbal and non-verbal feedback on touching. It includes guiding hands of the partners, providing cues related to preferred sites, amount of pressure and type of touch etc. The subjects are encouraged to improve communication and comfort level with each other for interaction in sexual area. During genital sensate focus, focus is not on orgasm. However, if one partner becomes excessively excited, they are advised to masturbate for completion of sexual activity.

Therapist evaluates the activities performed at home in subsequent sessions. Any issues arising out of the sessions are discussed. Practical advises to solve day to day problems is provided. Partners are encouraged for continuation of sessions and to follow the guidelines of therapy including ban on intercourse for successful outcome. Sensate focus sessions in home should not be hurried and enough time should be given to complete the prescribed activities comfortably.

b. Penetrative sensate focus/Containment- The couple needs to continue previous activities as suggested earlier. Now, penetration of penis inside vagina is allowed without movement. The aim is to experience vaginal containment by both the partners in relaxed state. This stage is started once the male partner is having erections and female partner is having vaginal lubrication. Usually female on the top position is preferred so that female partner can adjust depth of penetration, pressure and angle of penetration as per comfort of both the partners.

c. Completion- The last stage of the therapy involves vaginal containment with movements, genital thrusting and rotating and completion of sexual intercourse. The couple is encouraged to experiment with different positions and experience sensations with movement. The aim is to make sex a pleasurable experience for both the partners without any pressure of performance.

Mindfulness

Mindfulness-based approaches have been developed and proved to be effective in reducing stress, treating pain-related disorders, decreasing depression, and encouraging abstinence or other beneficial outcomes in addictions. In the treatment of addictions, mindfulness-based relapse prevention techniques such as urge surfing and SOBER (stop, observe, breath focus, expand awareness, and respond consciously) breathing meditation may reduce sensitivity to triggers, cravings, and negative affect (Vilariño, 2017).

The organizing principles of the MMSH (Mindful Model of Sexual Health) include the following:

- ◆ Respect based sexuality- Respects all people's rights to use their bodies as a safe place to enjoy their individual sexuality.
- ◆ Safety- There is no tolerance for anyone being exploited, used or abused for others to experience sexual gratification.
- ◆ Connection which is mindful- This technique necessitates an interest in one's inner self, as

well as an openness and curiosity for self-discovery. Pleasure and satisfaction are enhanced by the development of sexual intelligence and sexual empathy.

- ♦ Holism- It is a concept that encompasses everything. Sexual, mental, and physical well-being are all linked.
- ♦ Mind-body- spirit integration, including eastern and western viewpoints related to mindfulness

The MMSH has eight interconnected well-being domains. Physical health, sexual-emotional health, individuation, intimacy, communication, self-awareness, spirituality, and mindfulness are all proposed to be assessed and integrated as part of health and balance. Within each of these areas, there are features of healthy expression and balance, potential barriers to health and balance, potential consequences, dangers, or harms associated with these barriers, and suitable starting places for attentive inquiries for intrapersonal explorations (Blycker and Potenza, 2018).

In a 2019 study conducted by Leavitt et al., it was found that mindfulness during sexual situations has a positive effect on the sexual satisfaction, sexual well being and improved the self-esteem (Janssen and Bancroft, 2007). In another study conducted by Bossio et al. in men with situational erectile dysfunction, it was found that four week program including psychoeducation and mindfulness meditation led to significant improvement in sexual functioning (Bancroft et al., 2009). Other study by Kimmes et al. have also shown the benefit of mindfulness in anxiety mediated sexual dysfunctions (Nyandra and Suryasa, 2018). Thus there is some positive role of practicing mindfulness for improved sexual functioning in men with penile erection difficulties. Further studies on this subject would give us enhanced insight into the neurophysiological role of mindfulness in sexual dysfunction.

Directed masturbation

In the early 1970s, directed masturbation, a behavioural treatment for female orgasmic dysfunction, was discovered. Directed

masturbation, like most sex therapy methods, is based on the sex therapy model developed by Masters and Johnson. Their ground-breaking laboratory work from 1966 shown that men and women are equally capable of sexual response. Furthermore, their work in the field of sexual dysfunction treatment, which was published in the book 'Human Sexual Inadequacy' (1970), shown that people with sexual dysfunctions might improve significantly from a brief and directive treatment. The notion that women should be able to experience sexual pleasure and orgasm in the same way that men did in the 1960s was sparked by the more liberal sexual milieu and growing freedom of women, as well as the work of Masters and Johnson. Directed masturbation is a program of sex-positive education with exercises involving self-exploration and self-pleasuring, followed by partner activities. Research has shown that 60-90% of women with primary anorgasmia using directed masturbation exercises were able to experience orgasm during masturbation (Kohlenberg, 1974). Although the concept of directed masturbation is more widely used for female orgasmic dysfunctions but the method of directed masturbation could also be beneficial for men particularly single men suffering from erectile dysfunction and/ or premature ejaculation where this concept could be incorporated in homework assignment along with other modalities (Kandael et al., 2001).

Kegel exercise

Arnold Kegel initially described Kegel exercises for pelvic floor muscle strengthening in 1948. Kegel exercises helps to prevent cystocele, rectocele, and urinary stress incontinence, and can be used in managing erectile dysfunction and premature ejaculation. Pelvic floor muscles are a network of muscles that support the urinary bladder and help to control the urine flow. The pelvic muscles are divided into three groups:

1. The bladder- The bladder is a muscle that holds urine and is formed like a balloon.
2. Muscles of the sphincter- These muscles assist in the opening and closing of urethra, which is the duct that drains urine from the bladder.

3. The pelvic floor muscle [also known as the pubococcygeus or PC muscle]- It helps manage the urine flow by supporting the bladder and rectum (Huang and Chang, 2020).

According to a study, if the training programmes last more than three months, the treatment may be successful. Cavkaytar et al, 2015 suggested that the pelvic muscles be strengthened for at least eight weeks (Cavkaytar et al., 2015). After only a week of Kegel exercises, Messe et al. discovered that normal females had a significant increase in sexual arousal (Messé and Geer, 1985). Healthy subjects who did Kegel exercises had enhanced pubococcygeal muscles strength and improved sexual function (Mokhtar et al., 2013). Kegel exercises increased the orgasmic, arousal, and satisfaction domains of the Female Sexual Functioning Index in postmenopausal women, according to research conducted in Iran (Nazarpour, 2017).

Start stop technique

The ‘start-stop’ technique was developed by Semans. Sexual intercourse begins and progresses to a point near orgasm/ejaculation in this technique, which is sometimes referred to as ‘edging’. All sexual stimulation is halted until the sensation subsides, at which point sexual intercourse may resume. The ‘squeeze’ or ‘stop-squeeze’ approach, first advocated by Masters and Johnson, is another technique described. Intercourse progresses to the point of near orgasm/ejaculation in this approach. The penis is extracted from the vagina and the glans of the penis is compressed at this moment. Masturbation before planned intercourse is another typical practise employed by younger boys to delay ejaculation. As the age-related refractory period, the recovery interval following ejaculation during which it is physiologically impossible to have subsequent orgasms, increases, this strategy may become increasingly difficult to apply (Martin et al., 2017).

In the treatment of PE, certain therapy techniques can be partially beneficial. Behavioral or psychological therapy, on the other hand, is often not sufficient to completely manage and

treat PE. Despite a high short-term success rate of up to 65 percent, long-term success appears to be quite low, with just 25 percent of patients properly managed (deCarufeland Trudel, 2006). It’s also worth noting that later research have found it impossible to replicate and validate the reported success percentages. Psychosexual behavioural treatment has a number of drawbacks as well. To begin with, the treatment’s efficacy is unknown, and it may or may not be effective in treating specific people. Furthermore, for the therapy to be effective, it must be given time and frequent practise. This time commitment, as well as the need for several sessions with an expert, may be prohibitive to the patient’s utilisation of this therapy option. Finally, several of the strategies include the participation of a spouse in the management process, which can be problematic if the partner is unwilling or unable to devote the necessary time (Martin et al., 2017; de Carufeland Trudel, 2006).

Squeeze technique

The squeeze technique for premature ejaculation works by manually stopping ejaculate from exiting the penis by applying pressure to the penis. It is possible to seal off the urethra just enough to prevent ejaculation and lengthen intercourse by temporarily stopping sex and squeezing the penis at precisely the appropriate time (before point of no return) and in the correct spot (Abdel-Hamid et al., 2001).

Mixing with life style intervention

While it’s difficult to prove causation, multiple studies have found strong links between ED and lifestyle disorders such as cardiovascular disease, obesity, diabetes, hypertension, and smoking (Polland et al., 2018). Endothelial dysfunction appears to be the common connection between these clinical entities, which emerges as ED prior to the start of symptomatic Cardiovascular Disease due to the reduced size of the penile arteries. Obesity, diabetes, hypertension, and smoking, which are all risk factors for CVD, also increase the likelihood of ED by causing persistent low-grade inflammation, which leads to endothelial dysfunction (Corona et al., 2013).

Obesity, diabetes, hypertension, smoking, and psychological factors have all been demonstrated to improve or be linked to improved erectile performance. The linkages between ED and lifestyle illnesses provide a valuable area for healthcare providers to investigate in terms of ED management. Lifestyle changes and a multimodal approach that includes psychosocial aspects are key interventions that can help people with ED, and they should be among the first-line recommendations for ED treatment.

Barriers to non-pharmacological interventions in male sexual dysfunctions

There are several barriers to utilizing non-pharmacological interventions to manage male sexual dysfunction. Sexual medicine has not received due importance during the training and teaching of medical students. Hence, the therapist's expertise in delivering interventions in India varies widely. The expertise depends on the individual therapist's motivation and learning opportunities.

There are several barriers to utilizing non-pharmacological interventions to manage male sexual dysfunction. Doctors themselves tend not to enquire about sexual problems owing to perceived lack of expertise, lack of time, stigma, and hesitation. Sexual medicine has not received due importance during the training and teaching of medical students. Hence, the number of therapists is limited, and the therapist's expertise in delivering interventions in India also varies widely. The expertise depends on the individual therapist's motivation and learning opportunities (Avasthi, 2020).

Sex is still considered a taboo subject among the general population, and people hesitate to seek help or talk to their doctors about sexual health. Due to inadequate promotion of sexual medicine and advertising of alternative medicine practitioners in India, many patients seek initial help from traditional practitioners, quacks, and unqualified self-proclaimed sexual medicine experts. Many such practitioners are known to engage in unethical practices, propagating myths and misconceptions and advocating for the discouragement of consultations from practitioners in modern medicine.

Conclusion

Male sexual disorders are prevalent and treatable clinical conditions. The disorders are classified according to the respective dysfunctions as per the sexual response cycle. Several different non-pharmacological treatment strategies are available for MSD. Although, the evidence base for the non-pharmacological treatment strategies is still not adequate, they are frequently used in clinical practice. The interventions are often acceptable and empirically useful.

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Review Article

Management approaches to Dhat syndrome: A review

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Abstract

Dhat syndrome is a culture-bound syndrome with pathological concerns about losing vitality through the passage of 'Dhat', which is considered equivalent to semen. It is typically diagnosed in young adult males but also found in females in various age groups. A PUBMED search performed with keywords of 'Dhat syndrome' & 'Semen-loss' with the Boolean operator 'OR' yielded 86 articles across various types. Non-English articles and non-relevant articles were excluded. Various studies have described and discussed the historical perspectives, evolution, phenomenology, and clinical profile, but few studies have actually focused on the management aspects of Dhat syndrome. There is a paucity of interventional research in this area, and existing literature has wide variability in the reports due to heterogeneous samples and methodologies. Individualized plans, patient-centered and integrated approaches combining psychotherapeutic and pharmacological management have been suggested as beneficial by many reviews and research outcomes compared to any methods alone. More interventional and clinical trials are needed to standardize the management approaches.

Keywords:

Dhat Syndrome, Semen loss, Culture-bound-syndrome, Sexual disorder

Introduction

Dhat syndrome is a culture-bound syndrome found in the Indian sub-continent, particularly in northern and eastern regions and across

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southeast Asia and southern parts of China. It finds its phenomenological roots in religious beliefs of loss of vital energy through the passage of semen. According to these beliefs, semen is depicted as the most precious fluid of vitality and takes considerable time and resources to be produced. The historical perspectives, evolution, and semen conservation doctrines in ancient Indian culture compared to western perceptions are discussed in detail by Raguram (Raguram, 1994). Many concepts in Vedic literature and subsequent commentaries like Charaka Samhita and Sushruta Samhita are highly abstract. They cannot be easily understood when compared to modern medicine concepts and lead to absurdity.

This is possibly propagated by mixing ideas over generations and distorted understanding of concepts in Ayurveda that are widely prevalent in Indian culture and lay concepts of health and disease (Akhtar, 1988; Das & Dutt, 2021; Rao, 2004). The classical explanation of 40 days and 40 drops for sequential condensation of food into the ultimate essence is semen (referred to as a product of “shukhra dhatu”, the most precious among seven dhatus present in the body which is the essence of vitality and energy). Losing such a fluid would result in myriad symptomatology, though often predominated by somatic symptoms, typically weakness and fatigue. Many studies (Avasthi et al., 2012; Chadda and Ahuja, 1990; Behere and Natraj, 1984; Sumathipala et al., 2004) on exploring the origins and phenomenology of Dhat syndrome have reported similar symptoms. Most of the persons suffering from Dhat syndrome attribute it to loss of semen through various modes like night falls, white discharge in urine, and masturbation. Anxiety and depressive symptoms are present in many patients, but the theme of loss of vitality through semen is the core of psychopathology. Although the typical Dhat syndrome is described in males only, similar concerns in females are also known. Many studies (Singh et al., 2001; Chaturvedi et al., 1993; Trollope and Kumar, 2001; Grover et al., 2016; Grover et al., 2014; Chaturvedi, 1998) have reported various causes like non-pathological genital secretions, leukorrhoea, the passage of ‘Dhat’ in urine. Most of these women had a high prevalence of comorbid stress, anxiety, and depressive disorders with considerable somatization. However, not much information is available on the management of Dhat and related syndromes in females.

Bibliometric analysis has reported that most of the research done on Dhat syndrome is from the Indian subcontinent, and authors mainly belong to this region, followed by Europe. Most of the research is focused on historical concepts, evolution, variants, epidemiological aspects, and phenomenology, and only a few studies, predominantly review articles, focus on management (Kar et al., 2021). Even in review articles, management aspects are briefly discussed and restricted to half a page or a paragraph without elaborating the details.

Further lesser studies have attempted controlled trials with various interventions.

This article attempts to look into various available literature, mainly focusing on management aspects. A PubMed search is done using the Boolean operator ‘OR’ with keywords of ‘Dhat syndrome’; ‘Semen loss’, resulting in 86 articles listed from 1975 to date (March 30th, 2022). A sharp rise in the number of publications started since 2004 and again saw a decline after 2017. 2015 saw a maximum number of 13 publications in a single year and an average of 6 publications per year from 2012 to 2017. Out of 86, there were 17 review articles, 3 systematic reviews, 30 original research with descriptive methodology, 4 original research with interventional methodology, 2 clinical trials, 10 case reports, 4 case series, 15 letters to editors, and 1 brief research communication. However, this search is restricted to PubMed, but there are possibilities that more literature is available and some of which are cited in this article.

Although it is very important to know various ways of presentation, epidemiology, and phenomenology, many studies report that patients with Dhat syndrome commonly does not approach allopathic practitioner or psychiatrists early. Even if they approach, adherence to treatment and response to treatment are not consistently reported as ‘encouraging’. Hence, before discussing management and approaches, a brief discussion is worthwhile on understanding the pattern and pathways to care until the patient with Dhat syndrome reaches out to a psychiatrist.

Pathways to care and clinical presentations

Patients with Dhat syndrome do not easily approach psychiatrists and are considered the main barrier to effective care delivery. Ansari and Mulla (2017) have discussed the delays and previous consultation with their effectiveness in detail. The mean delay in seeking psychiatric consultation is 8 months (SD \pm 6.25) since first contact to seek help for Dhat syndrome-related problems with anyone other than Psychiatrists (including family friends). 98% had previous consultations with non-doctors, indigenous

medical practitioners, or allopathic practitioners. More than half of them (53%) have consulted quacks, indigenous practitioners, or paramedical staff. Those who have consulted indigenous practitioners had around a mean delay of 2 months more than the above-mentioned (8 ± 6.25 months) to present at a psychiatrist. One-third (34%) have consulted family & friends. Consultation with allopathic practitioners constituted only 11% (Ansari and Mulla, 2017).

In their descriptive study, Grover et al. (2016) report that the favorite choice for first contact was indigenous practitioners followed by friends and relatives. Ayurvedic practitioners were the most common first choice among indigenous practitioners. General physicians were the most common allopathic practitioners, followed by urologists and surgeons. It is worth noting that none of the patients took help from psychiatrists as their first preference. 1/4th of patients sought help from psychiatrists as a second contact and around 1/5th of them as third and fourth contact. The mean years of passage of Dhat were nearly 7 years. Sexual dysfunction had slightly more prevalence than anxiety-depressive symptoms in the study. The study reports significant delay since the onset of symptoms and nearly 2 consultations before approaching a psychiatrist. The myths regarding semen loss get reinforced during this delay, and further increases the distress. This study also reports patients' hesitancy to consult medical professionals who prefer to seek help from their friends / relatives. This adds to a significant delay in approaching psychiatrists (Grover et al., 2016).

Grover et al. (2016), in their follow-up study of patients with Dhat syndrome, observed patients for 6 months after initial evaluation. 36% of them completed treatment, 22% dropped out early, and 42% were late dropouts. Early dropouts cited "no time for consultation" and "not having prescribed any medication" as reasons for dropping out, while late dropouts cited "no improvement of symptoms" as the reason. This suggests practitioners discuss the follow-up visits with patients, considering medications and adjunctive or alternatives when symptoms are not relieved (Grover et al., 2016).

The concept of semen loss and myriad symptoms experienced by patients may stem from deep-rooted cultural beliefs that evolved from the complex interplay of socio-cultural models of health & disease. It is influenced by concepts from native Indian medicinal systems and Ayurveda, other systems like Unani and Siddha, vague concepts of sexuality focused excessively by native healers (Kar and Varma, 1978), and distorted propagation of information through generations. Patients with Dhat syndrome generally have less scientific knowledge of human sexuality and do not get easily convinced with an understanding of Dhat syndrome given by modern medicine (Grover et al., 2015). Many do not know what the 'Dhat' is, but most believe it is a vital fluid. Many believe it is semen, and others perceive Dhat as pus, sugar, urine, etc. A multi centric nationwide study in India presented the most commonly reported reasons for passage of Dhat as excessive masturbation (55.1%), sexual dreams (47.3%), excessive sexual desire (42.8%), and consumption of high energy foods (36.7%). The most common situation in which participants experienced the passage of Dhat were as 'night falls' (60.1%) and 'while passing stools' (59.5%). The most common consequence due to the passage of Dhat was weakness in sexual ability (75.6%) (Grover et al., 2016). Post hoc analysis details from Ansari and Mulla (2017) opine that many myths were instilled or solidified in previous consultations between friends, relatives, and quacks. Hence, a detailed understanding and busting of myths with a non-judgmental and empathetic approach need to be taken up before attempting treatment (Ansari and Mulla, 2017). This may be followed by educative approaches, first in unlearning the myths, learning the scientific concepts, and internalizing them. However, when a person presents, they generally expect magical cures and energizing tonics (Grover et al., 2014), usually promised and prescribed by quacks. They generally expect this because of their various symptoms. Many studies (Deb and Balhara, 2013; Prakash and Kar, 2019) have identified symptoms found in Dhat syndrome such as somatic, anxiety-depressive, and sexual symptoms that require different management approaches. In Grover et al. (2015) study, 1/3rd of them had anxiety/stress-related

neurotic disorder/depressive diagnosis. Another 1/3rd had sexual dysfunction diagnosis, amounting to more than 60% of Dhat syndrome patients having comorbid disorders (Grover et al., 2015).

Hence, one model of initiating management may not always work for every patient. Wig et al. (1960) suggested many approaches based on listening and educational approaches with judicious use of medications and placebo whenever required (Wig et al., 1960). Avasthi and Gupta (1997) in their manual for standardized management of single males with sexual disorders suggests mainly sex education, relaxation therapies, and medications (Avasthi & Gupta, 1997).

In a review article, Kar and Singh (2016) systematically reviewed 17 studies focusing exclusively on the management of Dhat Syndrome. They emphasized the 'Person-centered-care' as a holistic management approach rather than symptomatic management (Kar and Singh, 2016). This includes similar elements mentioned above in Wig et al., (1960) suggestions. This approach may be an effective and more acceptable model in view of wide individual variations that need to address each patient's unique need (Wig et al., 1960).

Before going into management, one may also have to assess the source of knowledge acquisition regarding sexuality-related matters, which may have a formative effect on the patient's cognitions related to the 'Dhat' concept. The concepts are formed and solidified by a complex interplay of various sources such as lay magazines, porn literature, ads about sexual problems widely displayed on the street side, peer discussions with friends and family members, etc. (Prakash, 2007). Practitioners of indigenous medicine, native healers, religious healers, and various persons influence patients by further reinforcing the semen loss as a sin. They try to get a cure through various herbs, native medicines, and various practices like celibacy, diets, and religious offerings. The stigma, guilt, and shame of having lost the vitality through semen loss would make them apprehensive about reaching out to doctors.

As we all know, a proper diagnostic evaluation and formulation have to precede the management plan. Hence, longitudinal history, treatment history, and history of comorbid illnesses have to be elaborately taken. This may be followed by a thorough physical examination and a focused exam of the genito-urinary system. This helps in assessing genito-urinary infections and other causes which can result in discharge of fluids similar to 'Dhat'. This would reassure patients that the treating doctor has considered their concerns. Many patients having concerns about penile size, distortion, or 'weakness' may be addressed for further reassurance and educative approaches using the examination findings instead of depending on a surgeon or urologist entirely for genital examination. If there are observable gross anomalies and clinical findings, it will help us take the specialists mentioned above' opinions for detailed evaluation, yet retain the 'Dhat' syndrome as a working diagnosis if the pathological concern on the loss of vitality through 'Dhat' persists with or without positive examination findings. This also helps prevent patient dropouts due to dissatisfaction with 'inadequate physical examination'.

Grover et al. (2014) have come up with a comprehensive questionnaire for assessing Dhat syndrome, which serves as a comprehensive checklist for many clinical features and beliefs associated with the passage of Dhat and its attribution to symptoms (Grover et al., 2014).

Overall, treatments may be broadly classified into pharmacotherapeutic and psychotherapeutic approaches. Psychotherapeutic approaches focus on educating the patient and addressing the myths. Pharmacotherapeutic approaches mainly focus on alleviating anxiety, targeting depressive, somatic, and sexual symptoms which works from easily understandable symptomatic or somatic aspects to relatively hidden cognitive aspects (outside to inside). On the other hand, psychotherapeutic approaches work from core cognitive aspects and restructuring, thereby reducing somatic symptoms and illness behavior (inside to outside).

Explorations of the patient’s cognition at multiple levels must be done, depending on the patient’s psychological sophistication or metacognitive abilities. On a superficial level, their disease model needs to be understood, which in one or another way is related to loss of vitality due to semen loss. Patients may be concerned and preoccupied with their symptoms and/or the consequence of loss of vitality by semen loss. The fear of becoming impotent and unable to have a healthy sex life or procreation

may frequently occur, especially in young and unmarried patients. Hence, the management needs to focus on patients’ concerns before we engage them in psycho-educative or cognitive-behavioral and other therapies. Fear of impotence and anxiety may secondarily produce or worsen psychological and sexual dysfunction, including erectile dysfunction and premature ejaculation, performance anxiety, or delayed orgasms/anorgasmia.

Table 1: List of symptoms categorized in Dhat syndrome

| Somatic Symptoms | Anxiety – Depressive Symptoms | Sexual Symptoms |
|--|--|---|
| Generalized Weakness | Nervousness, fear (of illness, being cursed, impotence or death) | Reduced penis size and girth |
| Easy Fatiguability | Restlessness | Distortion of penis shape like bending, nodules etc |
| Multiple body aches | Autonomic arousal symptoms such palpitation, sweating, increased muscle tension, dryness of mouth and throat, choking sensation, giddiness | Erectile dysfunction |
| Gastro-intestinal symptoms such as bloating, belching, nausea, abdominal fullness, ‘gas’ formation, flatulence, irregular bowels | Low mood, lack of pleasure and energy, lack of motivation, guilt, shame, low self esteem | Premature ejaculation |
| Genito-urinary symptoms such as burning micturition, hesitancy, dribbling of urine, ‘reduced force’ of urine stream, altered color of urine, | Lack of concentration, Loss of memory | Loss of libido |
| Loss of weight, anorexia, hollowing of eyes and chin, dark circles | Suicidal ideations | Pain or itching in groin or genital region |
| Sleep disturbances, excess or loss of sleep | | Boils, ulcers, swelling in genital region |
| | | Dryness of vagina, dyspareunia (in females) |

Non-pharmacological management

A study (Chavan et al., 2009) presents a 3-session specific psychological intervention based on the psychoeducation model, which is derived from the PLISSIT model (Annon et al., 1976). Three sessions targeted anatomical, physiological, and open sessions to express opinions and clarifications.

1st session focused on the anatomy of sex organs using charts and models. Both female and male anatomy was shown. The concerns regarding the size of the penis and, depth of the vagina, other parts related to sexual activity were explained. Fears regarding the reduced size of the penis by

loss of Dhat or masturbation and night emission were met at this session. The second session focused on physiological aspects, which dealt with erogenous zones, production and storage of semen, the content of semen and other secretions which are mistaken as semen was discussed, and stages of sexual activity were explained. 3rd session was an open session meant for expressing opinions, further discussion, and other concerns. A study reports that 47.61% (20 out of 42) patients came for the first follow-up, and the number dropped to 21.42% (9 out of 42) in the second follow-up visit and 11.92% (5 out of 42) in the third follow-up visit. 16.72% (7 out of 42) patients attended more than 3 follow-up

visits. Reassessment at the end of treatment among patients attending 3 or more sessions showed more than 50% reduction in symptoms in more than 71% of patients, which is encouraging.

After various assessments, Salam, Sharma and Prakash (2012) proposed a Cognitive Behavioral Therapy (CBT) module. This includes basic sex education, cognitive restructuring, relaxation training, imaginal desensitization, masturbatory training as homework, Kegel’s exercises, ‘start-stop technique’, and ‘squeeze technique’ for sexual dysfunctions (Salam et al., 2012). The number of sessions in the CBT module developed in this study ranged from 11-15, with an average of 45 minutes duration. The components of the CBT module are intake and assessment (in sessions 1 and 2), socializing the patient to CBT (in sessions 3 and 4), basic sex education (in sessions 4 and 5), cognitive restructuring, and other techniques (in sessions 6 to 15). Apart from various cognitive distortions that are dealt, the focus is given to emotional and interpersonal aspects of sexuality. The intertwined schema of masculinity and sexual power is dealt with in performance anxiety issues. Other techniques such as Jacobson’s Progressive Muscle Relaxation (JPMR), imaginal desensitization, masturbation as homework to understand the harmless loss of semen, Kegel’s exercises, and squeeze and start-stop techniques are taught in cases of sexual dysfunction. However, the study has used limited cases and emphasizes the need for a larger study sample, multiple modules, and comparative trials.

Another study reports a 3-case experience of effectiveness of CBT (Tripathi and Sridevi, 2014). The intervention included psychoeducation, supportive psychotherapy, and cognitive behavior therapy for 4 months in 18 sessions, and informed consent was taken from the patients. The cognitive behavior therapy was compiled with activity scheduling, cognitive restructuring (thought challenging, role-playing, positive statements, and behavioral rehearsal and relaxation therapy (JPMR). Beck’s Depression Inventory - Version 2 (BDI-II), Hamilton’s Rating Scale for Anxiety (HAM-A), and The International Index of Erectile Function (IIEF) were used for pre-post assessment. The study reported a significant reduction in depressive and sexual dysfunction and modest improvement in anxiety scores. Another recent study proposes a simple 2-session therapy proposal that could be used as a brief intervention and can also be used in tele-consultations, liaison clinics, and non-psychiatric settings. Session-1 is a preparative session where rapport is built, assessments, examinations, and expectations are clarified. In the next phase, necessary investigations may be done. Session-2 is an 8-step dialogue session in question-answer format, wherein patients’ beliefs are challenged, and alternative explanations are proposed. This follows validation, psychoeducation, and providing a mind-body link followed by addressing concerns and summarizing (Innamuri and Ramaswamy, 2021). Clients are encouraged to express dissatisfaction and need for more detailed psychotherapeutic and other management options, including a formal referral to a psychiatrist (in case of non-psychiatric consultation).

Table 2: Summary of non-pharmacological management

| Cognitive | Behavioral | Psycho-educative |
|---|---|---|
| Exploration of Schemas—especially regarding masculinity, sexual power and semen preservation | Relaxation Training Jacobson’s Progressive Muscular Relaxation Imaginal desensitization | Basic Sex education Explaining reproductive anatomy and physiology using charts and diagrams |
| Challenging beliefs/Thought Challenging, providing alternatives Cognitive restructuring Roleplaying and reflection | Activity scheduling Behavioral rehearsal Masturbatory Practice Kegel’s Exercises Squeeze & Start-stop technique | Educating about human sexuality, phases and normal limits |

Pharmacological management

Pharmacological management has been discussed with varying results across many studies. Antidepressants and anti-anxiety, sedative-hypnotic classes of medications, have been widely used apart from nutraceuticals. For an average patient who does not have much prior knowledge of various medications, the very prescription of medication serves as a therapeutic maneuver. A supplemental dose of vitamins, other tonics, and other herbal-based products that do not have a serious evidence base, commonly prescribed in non-specialized settings, may still have a placebo effect and keeps the hopes alive in patients regarding the 'cure' has the potential to retain patient in treatment. This, in turn, provides a second or subsequent opportunity to engage patients in further sessions. The previously mentioned follow-up study of patients with Dhat syndrome by Grover, Gupta, and Avasthi (2016) also suggested that early use of some form of medication may validate the medical model and help hold patients in treatment (Grover et al., 2016).

Comorbid anxiety and depressive disorders, and sexual dysfunction may be targeted effectively by judicious medications. Several studies report the effective use and outcomes of pharmacotherapy. Selective Serotonin Reuptake Inhibitors (SSRIs) and Benzodiazepines are the most commonly used medications.

First of its kind clinical trials compared several randomized groups with and without pharmacotherapy with groups receiving Imipramine or Lorazepam for 4 weeks which fared significantly better than only counseling or placebo and other medications groups (Bhatia et al., 1989; Bhatia and Malik, 1991). In another study, Fluoxetine trial in depressed patients with Dhat syndrome, over 20-40 mg dose for unspecified duration resulted in statistical improvement of symptoms (Dhikav et al., 2008). However, this study does not have a control

group or effect on the improvement of distress due to passage of semen compared to depressive symptoms. Another study by Rajkumar et al. (2016) also emphasized the effectiveness of antidepressants in a depressed subset of Dhat syndrome. It may be considered a depressive spectrum disorder (Rajkumar et al., 2016). Several case reports discuss the role of SSRIs and other medications in managing Dhat syndrome and comorbid conditions. However, no clear guideline or consensus is available. The clinical decision largely depends on the symptomatic status and choice of the treating psychiatrist and, finally, the patient accepting the treatment. However, Malik (1991) also reports that there could be patient drop out if not treated initially by medication (Malik, 1991). As discussed earlier, the follow-up study by Grover, Gupta, and Avasthi (2016) also reports 'not prescribing' as a significant reason for dropouts. Hence individualized treatment choices using the patient-centered approaches would help construct management plans rather than imposing the same (Grover et al., 2016).

However, while prescribing medications, one should take adequate care not to compound the already existing problems by commonly occurring side effects of the prescribed medication. SSRI-induced erectile dysfunction may be one to be kept in mind. SSRIs' early activating effects, such as Fluoxetine and Sertraline, may worsen anxiety and restlessness. Sedation, daytime drowsiness, worsening of fatigue, giddiness, and cognitive symptoms can happen with potent and long-acting benzodiazepines. Other classes of medications are not commonly used and hence rational and judicious use of medications and the shaping effect of combined psychotherapies would result in a better outcome.

Conclusion

Many studies on Dhat syndrome focus mainly on historical concepts, evolution, variants,

Table 3: Summary of pharmacological management

| Class of Medications | Target Symptoms | Conflicting adverse effects to be watched for |
|--|--|---|
| Antidepressants | | |
| SSRIs and SNRIs | Primary target symptoms are anxiety, depressive and also somatic. Also helps in Premature ejaculation | Sexual adverse effects like Erectile dysfunction, loss of libido, delayed ejaculation/orgasms Activating early effects may worsen anxiety, restlessness and sleep disturbances |
| Tricyclics | Somatic (especially body aches), Depressive and Anxiety symptoms May be of help in cases of insomnia, weight loss May help in Premature Ejaculation | Sexual side effects like ejaculatory disturbances, reduced libido Anticholinergic side effects, weight gain, sedation, orthostatic hypotension - may worsen the fatigue or giddiness |
| Others | | |
| Benzodiazepines and other hypnotic/sedatives | Primarily anxiety and insomnia | Cognitive side effects, day time drowsiness, giddiness, fatigue, rebound anxiety and insomnia (in case of shorter acting drugs), dependence in case of long term use, abuse potential. |
| Nutraceuticals | Somatic and sexual, cognitive symptoms No significant evidence May help in case of Erectile dysfunction, fatigue and weakness – are of doubtful value and cost-benefit needs to be analyzed. | No significant side effects |

epidemiological aspects, and phenomenology. However, fewer studies focus on management, and further, lesser studies have attempted controlled trials with various interventions. Most of the studies have fewer sample sizes and single study sites. Larger samples involving multiple centers with a wider range of interventions would shed more light on management aspects. However, obtaining a homogenous group may be difficult due to highly variable presenting symptoms and unique styles of thinking and attribution towards the symptoms and disease model. A person-centered approach with

individualized management will prove beneficial when it comes to clinical management. A patient and empathetic, non-judgmental listening would help understand underlying schemas and cognitive distortions. While doing so, on the other hand, symptoms, and comorbidities have to be addressed using various approaches. Hence an integrated and patient-centric approach with combined pharmacotherapy and psychotherapy would be beneficial in managing Dhat syndrome.

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Review Article

Nosology, clinical features, evaluation and management of penile dysmorphic disorder : A review of existing evidence

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Abstract

Penile Dysmorphic Disorder (PDD) is the persistent anxiety and preoccupation about having a small penis combined with repetitive checking behaviors, leading to significant distress and/or impairment. Literature is scarce regarding the risk factors, clinical features, and comprehensive management of PDD in men. There is a considerable degree of uncertainty regarding the risk factors, nosological status, psychopathology, diagnosis, and management of PDD. The present review will provide an overview of risk factors, patho-clinical features, and diagnostic strategies using screening instruments specific to PDD. It also aims to summarize the multimodal treatment options involved in managing PDD. The literature review shows that though the psychopathological understanding of PDD is in its early stages, considerable knowledge has accrued over the past few years regarding the phenomenology and psychopathology of PDD, which facilitates a better understanding of the disorder and guides appropriate surgical and/or psychological interventions. Specialized psychotherapies such as psychosexual therapy involving individuals and couples have been frequently used in individuals with PDD.

Keywords:

Penile dysmorphophobia, Small penis syndrome, Nosology, Diagnosis, Management

Introduction

The male genitalia, especially the penis, is

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perceived as a symbol of masculinity and sexual prowess (Kim, 2016). Penis along with, muscle mass, body hair, and built are considered aesthetic ideals of the male gender. They are not only sources of confidence and self-esteem but are also subjected to repeated self-scrutiny, comparison, and teasing by peers. Anxiety about the size and appearance of the penis starts as early as childhood when the child compares his penis with his male siblings. Around 62.7% of boys developed anxiety about penis size in childhood after comparing their penis sizes with their friends (Mondaini and Gontero, 2005). The

anxiety mentioned above is named “Small Penis Syndrome” (SPS), where the person has anxiety about the subjective perception of the size, appearance, and girth of the penis both in the flaccid and erect states despite evidence for the contrary. The anxiety can stem due to an obsessive rumination or body dysmorphic disorder (BDD) named penile dysmorphic disorder (PDD) or due to psychosis (Wylie and Eardley, 2007).

Penile Dysmorphic Disorder (PDD) is diagnosed when the anxiety about a small penis persists as a preoccupation for at least one hour per day along with repetitive behaviors such as checking, leading to significant distress and/or impairment (Veale et al., 2015c). Men with persistent PDD report lower sexual satisfaction despite an intact libido and arousal mechanism (Veale et al., 2015c). Studies reveal that only a few men approach the appropriate medical services (urology, sexual medicine, or psychiatry). A significant majority either avoid medical consultations due to shame or consult unreliable web sources and unethical or pretentious medical practitioners (Marra et al., 2020). Literature is scarce concerning the clinical features, course, and outcome, pharmacological and psychological management of PDD.

The present review aims to understand and elucidate the nosological status, risk factors, clinical features, and management of the penile dysmorphic disorder.

Methods

The literature search was done on PubMed, EMBASE, MEDLINE, Science Direct, Ovid, Cochrane Library, and Google Scholar. The search terms used were “penile dysmorphophobia”, “penile dysmorphic disorder”, “genital dysmorphic disorder”, “body dysmorphic disorder in males”, “penile dissatisfaction”,

“small penis syndrome” and “small penis anxiety”. The search gave a total of 32 articles. To ensure phenomenological specificity regarding PDD, papers that focussed only on small penis syndrome or have used PDD and SPS interchangeably were excluded after careful deliberation, yielding 22 articles for the present review.

Nosological status and epidemiology

Penile dysmorphic disorder (PDD) is the subjective preoccupation with the perceived flaw of the size and shape of the penis (Veale et al., 2015a). Hence, in the International Classification of Diseases (ICD-10), it is included under hypochondriacal disorder (F45.2), which includes dysmorphophobia and dysmorphic disorder (Chowdhury et al., 2022). In small penis syndrome (SPS), men are subjectively dissatisfied with the size of the penis, which is objectively normal size, and there is no excessive preoccupation as in PDD. Some authors opine that they could be a part of a continuum; however, the findings are inconclusive (Chowdhury et al., 2022). The nosological status of SPS and PDD is paramount in understanding the risk factors, phenomenology, and response to cosmetic surgery.

Although BDD is more common in women, BDD with the preoccupation with genitalia is more common in men (Phillips et al., 2006). Despite arising in diverse socio-cultural settings, the exact prevalence of PDD is unknown. However, in a study on Italian men having sex with men (MSM), the prevalence was 4.2% (Fabris et al., 2022). Further, men with PDD were older than the controls, and there was no difference in marital status or employment status (Veale et al., 2015b).

Risk Factors

Studies have found various risk factors associated with the development of PDD. On the contrary,

Box 1: Risk factors associated with the development of PDD

- Older age group (around 40s-50s)
- Childhood history of emotional, physical abuse and neglect
- Teasing about genitalia and sexual competency by peers
- Obesity (possibly due to physical appearance distortions caused by high pubic fat and overhanging abdominal fat)

ethnicity, sexual orientation, sexual abuse, previous history of genital surgeries, employment, or marital status did not confer any risk (Veale et al., 2015b).

Clinical features (history, phenomenology & psychopathology)

History

The most common age group of presentation of PDD in men ranges between 40 - 50 years (Veale et al., 2015b; Veale et al., 2015c). Men with PDD most often present themselves in specialties such as urology and plastic surgery other than psychiatry. The most common presenting complaints are decreased penile size, erectile dysfunction, sexual dissatisfaction, and persistent demands to increase the size and girth of the penis (Mansfield, 2020; Veale et al., 2015c). Individuals can also seek solutions such as cosmetic products, exercise, and surgical measures for enlarging the penile size (Veale et al., 2015c).

Clinicians should explore childhood risk factors such as exposure to adverse childhood experiences such as neglect and physical and emotional abuse (Veale et al., 2015b). Exposure to teasing about penile size by peers and sexual partners was associated with the emergence of PDD in later life (Veale et al., 2015b). Premorbid obsessive-compulsive personality traits confer an additional risk of developing PDD (Chowdhury et al., 2022). Comorbid psychiatric disorders associated with PDD include anxiety, depression, social phobia, and obsessive-compulsive disorder (Wylie and Eardley, 2007). A recent case study revealed the co-occurrence of Koro in a patient with PDD (Chowdhury, 1989a).

Phenomenology

The two central phenomenological experiences associated with PDD are dissatisfaction and shame.

Penis size shame or small penis syndrome (SPS) can be described as shamefulness regarding the penile size among males with a purportedly normal-sized penis (Veale et al., 2014). The

reported inadequacy in size of the penis will not corroborate with the findings in the clinical evaluation of the genitals. Penile dysmorphism, in simple terms, can be explained as dissatisfaction with the penile adequacy of the individual (Austoni et al., 2002).

The concept of dysmorphism can be grossly differentiated into the following two classes (Spyropoulos et al., 2005):

1. Aesthetic: The individual is dissatisfied with his penis in the flaccid state.
2. Functional: The individual is dissatisfied with his penis during the erection.

The dissatisfaction among such individuals can be considered inadequate in size, girth and symmetry (Nugteren et al., 2010). The shame due to distorted perception of penile size can lead to the individual considering himself to be unattractive or undesirable in the presence of the sexual partner (Shame, 1998).

Psychopathology

Penile dysmorphism shares similar maladaptive psychological processes associated with the disorder of body dysmorphism. Excessive consciousness of self and perceiving a distorted negative image from the observer's perspective are the core cognitive errors in body dysmorphic disorder (Osman et al., 2004). Individuals with PDD are found to have obsessive ruminations and hypochondriacal thought processes (Chowdhury et al., 2022). Depressed affect, low self-esteem, depressive cognitions, and suicidal ideas can be present when the PDD is complicated with depression (Wylie and Eardley, 2007). The low self-esteem among the men with PDD was predicted by the maladaptive self-perception of penile size apart from body weight, muscularity, and height (Tiggemann et al., 2008).

The self-discrepancy theory proposes three domains of self-belief, namely:

1. The actual self is the set of attributes an individual possesses

2. The ideal self is the set of attributes individual hope to possess
3. The should or the ought self is a set of attributes that an individual believes that he should possess.

The self-discrepancy theory to body dysmorphophobia has revealed that such individuals experienced their 'actual self' differed from both their 'ideal' and 'should self' (Veale et al., 2003).

Diagnosis with the use of screening instruments

- ♦ Beliefs about Penis Size (BAPS) (Veale et al., 2014): The BAPS scale assesses the perceived masculinity and shame about perceived penile size across domains such as - internal and external evaluation and the consequences anticipated due to perceived penis size and self-consciousness. The scale comprises 10 items measured on a five-point Likert scale. The presence of higher scores represents greater levels of shame about the size of the penis by the individual. Further, this scale can differentiate individuals with PDD and small penis anxiety.
- ♦ Cosmetic Procedure Screening Scale for PDD (COPS-P) (Veale et al., 2015a): This self-report scale comprises nine items. The items are measured on a Like rt scale with 0-8. Higher scores indicate higher preoccupation and distress regarding penile size and shape. Like BAPS, the COPS-P scale can also differentiate between individuals with PDD and small penis anxiety.
- ♦ Augmentation Phalloplasty Patient Selection and Satisfaction Inventory (APPSSI) (Spyropoulos et al., 2005): The questionnaire comprises four items, measured on a five-point Likert scale (scores 0-4). Three questions assess the patient's perception of their sexual body image and their perceived need for augmentation surgery. In contrast, the last question assesses the satisfaction with the outcome of the surgery. The lower scores indicated very low self-esteem and increased seeking for surgical intervention.

- ♦ Draw-a-penis-test (DAPT) (Chowdhury, 1989b): A graphomotor projective test that compares the image of the penis drawn by the individual and the normal penis, both in the flaccid and in the extended state.

Management

Patients with PDD need to undergo systematic evaluation and assessment, which can include the following, as mentioned in Table 2 (Seo and Choe, 2016):

The evidence for the effectiveness of various therapeutic options remains unclear. Interventions are broadly classified as surgical, nonsurgical, pharmacological, and psychological.

Surgical interventions

Surgical interventions are generally suited for patients with medical and surgical conditions, including penile carcinoma, penile trauma, excessive skin loss, buried penis, Peyronie's disease, and congenital anomalies (epispadias, hypospadias, and inter sex disorders). Most surgical interventions aim to increase the penile length or penile girth. Suspensory ligament incision was the most frequent surgical method employed in patients with PDD. Many studies have used inconsistent non-standardized techniques to assess patient satisfaction before and after the surgical procedure yielding various interpretations (Marra et al., 2020). Patients with current or past psychiatric illnesses and hypogonadism were usually excluded from surgical interventions.

Non-surgical interventions

Among the various non-surgical interventions, penile extenders, injectables, and vacuum devices were commonly used (Marra et al., 2020).

Pharmacological

The pharmacological options in PDD are few and are targeted toward tackling anxiety and hypochondriacal beliefs. Selective Serotonin Reuptake Inhibitors (SSRIs) are used in PDD but less frequently, and their efficacy and effectiveness need to be evaluated in the longterm (Micluia, 2021).

Table 2: Evaluation and assessment of penile dysmorphic disorder (PDD)

| Section | Areas of exploration /assessments |
|-------------------------------|--|
| Chief concern on penile size | <ul style="list-style-type: none"> • Related to flaccid or erect length • Penile girth • Rule out small penis syndrome |
| Psychiatric & medical history | <ul style="list-style-type: none"> • A thorough history to rule out depression, anxiety, and suicidality • Personality traits • Medical illnesses such as diabetes, endocrine disorders |
| Sexual history | <ul style="list-style-type: none"> • Sexual orientation • Fantasies • Sexual habits & their frequency |
| Physical examination | <ul style="list-style-type: none"> • Assessment of body habitus • Detailed genital examination to rule out physical anomalies (hypospadias, epispadias, Peyronie’s disease, etc.) • Assessment of testis & secondary sexual characteristics to rule out endocrine abnormalities • Significant amount of suprapubic fat, if any • Abnormalities of the penile skin (webbed penis, concealed penis, or penile scrotalization) |
| Penile size examination | <ul style="list-style-type: none"> • Flaccid length, stretched length, erect state length (after visual, tactile, or intracavernosal alprostadil stimulation), and flaccid circumference (penile girth) (Penile length measurement is taken from the pubopenile junction to the tip of glans with a scale with millimeter readings) |
| General considerations | <ul style="list-style-type: none"> • To ensure adequate privacy • Comfortable room temperature • Consistent methods of measurement with similar ruler/tapes |

Psychological

Literature reveals that psychological therapies such as psychosexual therapy, psychotherapy, and cognitive-behavioral therapy are warranted in patients with PDD before considering surgical interventions. Brief and focused counseling sessions targeting the anxiety about the small penis have proven to be effective and helped to avert unnecessary surgical procedures in more than two-thirds of patients (Marra et al., 2020). Psychotherapies target the central abnormal ideas of “penile representation of masculinity” and “penile adequacy in satisfying the partner”.

Inculcating the ideas of intimacy and love beyond the often-glorified acts of penetration is crucial in therapies addressing PDD (Mansfield, 2020; Minhas and Mulhall, 2017).

Cognitive challenging and reframing of maladaptive thoughts help enhance the self-worth of men with PDD. Intimacy-based interventions, either individually or as a couple, have been beneficial in correcting maladaptive thought processes linked to PDD (Minhas and Mulhall, 2017). Slow but consistent change from the premise of function and performance towards self-worth and intimacy needs to be the aim for such interventions.

Regional relevance & considerations

The main psychological construct in PDD is the constant preoccupation with genital appearance in terms of size and sexual functionality. Such preoccupations overlap with the constructs of various culture-bound syndromes prevalent in India, such as Dhat and Koro, where virility and penile adequacy govern the clinical presentation. A recent case study has corroborated an association between PDD and Koro (Chowdhury et al., 2022). Such findings suggest that future studies should explore the cultural influences and variations in PDD presentations.

Similar to the male-predominant prevalence of Dhat and Koro syndromes, in PDD, males are mostly affected. Nevertheless, studies need to explore the hidden prevalence of genital dysmorphophobia in females presenting with anxiety and sexual concerns related to performance and satisfaction. Common questions related to concerns on penile dimensions, functions, and partner satisfaction need to be considered during the regular screening of both individuals and among couples seeking consultations in sexual wellness clinics.

Conclusions

Despite increasing reports of penile dysmorphic disorder in adult men, especially those exposed to childhood adverse events and peer teasing, the nosological status of PDD remains unclear. PDD shares some common psychopathological features with body dysmorphic disorder. A variety of specific screening instruments and incorporation of inquiries related to PDD among individuals and couples visiting sexual wellness clinics would help identify this syndrome among vulnerable individuals. Psychological interventions play an integral role in pre-surgical assessment, correcting maladaptive thoughts and perceptions, and ensuring recovery in patients who had avoided surgical procedures.

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Review Article

Yogayurveda for male sexual dysfunction

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Abstract

Yogic kriyas help to improve the functioning of testes and help in the manufacturing of good quality sperms. Yoga therapies like Asana (posture), Pranayama (breath control), Mudra (positions or gestures or attitudes which represent the psyche), Bandha (locks for channeling energy), Kriya or karma (cleansing practices), Kundalini (movement of energy) and relaxation methods are very effective in male sexual dysfunction.

Introduction

Yoga is the science of right living. It is about the expansion of human capabilities. It works on all aspects of the person, including physical, mental, emotional, psychological, and spiritual. It integrates cognition, emotion, and behavior (Saraswati, 1969). The regular and perfect practice of yoga gives many benefits. Sodhana (purification of body) is the result of Satkarma. Asana achieves Dhradhata (firmness), and Sthirata (steadiness) is achieved by Mudra.

Similarly, Dhirata (patience) is achieved by Pratyahara, and Laghava (lightness) is achieved by Pranayama. Dhyana achieves Pratyaksha Atman (self-realization), and finally, Nirlipta (non-involvement or liberation) is achieved by Samadhi (Saraswati, 2012). Yoga therapies can set

the body's biological clock to keep us healthy physically and mentally. Yoga approaches health in a holistic manner (Pathak, 2017). Yoga can prevent and treat various diseases, but there are also certain limitations (Pathak, 2018). Sexual fulfilment controls human life. Tantra states that the purpose of sexual acts is threefold; procreation, pleasure, and salvation. Sexual dysfunction in males is a common problem that includes ejaculation disorders, erectile dysfunction, decreased sexual desire, and inhibited sexual desire. It is a physical or psychological problem because one cannot get sexual satisfaction and have sexual frustrations (Saraswati, 1984).

Ayurvedic concept of male sexual dysfunction

Male sexual dysfunction is described as Klaibya in Charak Samhita Cikitsasthana. It is caused by Retadosha (seminal morbidities), and it gets corrected by the purification of semen (Sharma and Dash 2011). In Susruta Samhita Sarirasthana, it is described that a man is incapable of begetting children whose seminal fluid (Retas) is affected by the aggravated Tridosas such as Vata, Pitta, and Kapha (Kunjral, 2012).

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As per Charak Samhita, it is of four types depending upon its causative factors - i) Bijopaghataja klaibya caused by seminal diminution ii) Dhvajabhangaja klaibya caused by non-erectile phallus iii) Jaraja klaibya caused by old age and iv) Sukra-ksayaja klaibya caused by excessive loss of semen due to frequent sexual intercourse (Sharma and Dash, 2011).

The man may constantly desire sexual intercourse, but because of the absence of an erection, he is incapable of performing the sexual act (Sharma and Dash, 2011).

In Charak Samhita, many therapies, such as aphrodisiac and rejuvenating recipes, Jivaniyaghrta (ghee prepared by cooking with herbs belonging Jivaniya group), Chyavanprash, Shilajatu, medicated enema, medicated milk and panchakarma therapy are described (Sharma and Dash 2011). Moreover, as per Susruta Samhita, various seminal defects should be treated by application of medicated oils (Sneha karma), urethral injections (Uttara Basti), and medicated ghees prepared out of decoction of various herbs (Kunjilal, 2012).

Common Yoga therapies

Many kinds of yoga therapies are described in various Yoga Samhitas, but the most common and popular among all therapies are Astanga yoga (eight limbs of yoga). Self-discipline (Yama), observances (Niyama), posture (Asana), breath control (Pranayama), withdrawal of the mind from sense objects (Pratyahara), concentration (Dharana), meditation (Dhyana), and absorption in the Self (Samadhi) are the eight branches of yoga (Nambiar, 1997). Some other important and effective yoga practices are Mudra (positions or gestures or attitudes which represent the psyche), Bandha (locks for channeling energy), Kriya or Karma (cleansing practices), Kundalini yoga (movement of energy), Svarayoga, Kriyayoga, Yoganidra (method of relaxation), Dharana (Kayasthairyam and Chidakasa Dharana) and Dhyana (AjapaJapa, Nada yoga, Japa and Vipassana). Kaya sthairyam is a fundamental practice of concentration on the steadiness of the body. Chidakasha dharana is the concentration on the Chidakasa. Chidakasa is the

space of consciousness located in the head region, behind the forehead, which is the mind screen or viewing screen of Ajna chakra (Saraswati, 1993). AjapaJapa is a one-pointed concentration on the spontaneous repetition of the so-ham mantra without effort. Nadayoga is the particular yogic practice associated with nada or sound. Om is known as Nada Brahman or Sabda Brahman. Nada yoga is a method of tracing sound back through its psychic and more subtle manifestation to the source. Nada yoga is a part of Laya yoga, the path in which one becomes totally absorbed in one thing. In the case of Nada yoga, one becomes totally aware of inner sound. Japa is defined as the meditative repetition of a mantra. Mantra repetition is called Japa (muttering). Japa comes from the mouth (Swami, 1974). Vipassana (Antarmouna) means to see carefully. To see means observing and experiencing through the senses. It is a meditative technique that leads to inner tranquility and silence (Bhalekar, 2022). Various signs of success in practicing yoga therapies are slimness of the body, cheerful face, hearing of the mystical sound, shining eyes, sense of wellness, control over the Bindu (the nectar of immortality), increase in gastric fire and purification of Nadis. Asanas alleviate diseases, Pranayama removes the sins, and the practice of Pratyahara brings an end to mental illness (Gharote et al., 2002).

Specific Yoga therapies for male sexual dysfunction

I) Asana - Any asana must be steady and comfortable for the practitioner. By practicing asanas, the body becomes strong and disease-free (Nambiar, 1997). Postures improve the tone and plasticity of muscles. They activate the stretch reflexes at the level of the spinal cord. They have local, peripheral and central effects on the body. For example, they strengthen the pelvic floor muscles.

1) Pawanmuktasana series 2 (Digestive or abdominal group asanas) - This group of asanas is concerned with loosening up the joints. The asanas are - Utthanpadasana, Chakrapadasana, Pada Sanchalanasana, Supta Pawanmuktasana, Jhulana Lurhakanasana, SuptaUdarakarshanasana, ShavaUdarakarshanasana and Naukasana (Saraswati, 1969).

2) Pawanmuktasana series 3 (Shaktibandha asanas or energy block postures) - This group of asanas is excellent for persons suffering from disorders of the reproductive systems. It eliminates energy blockages in the abdominal area. The asanas are Rajju Karshanasana, Gatyatmaka meru Vakrasana, Chakki Chalanasana, Nauka Sanchalanasana, Kashtha Takshanasana, Namaskarasana, Vayu Nishkasana, Kawa Chalasana and Udarakarshanasana (Saraswati, 1969).

3) Surya Namaskara (Salutation to the sun)- In classical yoga texts, the sun is represented by Pingala Nadi. It carries vital force. It is a very effective practice for loosening, stretching, massaging, and toning all the joints, muscles, and internal organs of our body. The asanas are - Pranamasana, Hasta Utthanasana, Padahastanasana, AshwaSanchalanasana, Parvtasana, Ashtanga Namaskara, Bhujangasana, Parvtasana, AshwaSanchalanasana, Padahastanasana, Hasta Utthanasana and Pranamasana (Saraswati, 1969).

4) Sarvangasana (Shoulder stand pose)- It stimulates the thyroid gland and balances our body's circulatory, digestive, reproductive, nervous, and endocrine systems. It increases blood flow to the brain. The mind is tranquilized by it. Mental stress, emotional stress, fear, and anxiety are relieved. It helps clear psychological disturbances. The exchange of air in the body is improved. It massages the abdominal organs. It increases blood circulation to the legs, abdomen, and reproductive organs. This practice is contraindicated in case of enlarged thyroid, liver, and spleen, cervical spondylitis, slipped disc, hypertension, heart diseases, and thrombosis. (Saraswati, 1969).

5) Halasana (Plough pose) - Abdominal muscles are toned up. Back muscle spasm is relieved. Spinal nerves are strengthened. The sympathetic nervous system is activated. Blood circulation to the whole brain is increased. This practice is contraindicated in case of hernia, slipped disc, sciatica, hypertension, and spondylitis (Saraswati, 1969).

II. Pranayama- Breaking the continuity of respiration is Pranayama as defined by Maharshi Patanjali. Pranayama minimizes the impurities of

the mind which are obstructions of knowledge. Then only our mind is fit to practice Dharana (Nambiar, 1997).

1) Nadi Shodhana pranayama (Psychic network purification) It nourishes the whole body by supplying more oxygen. The blood is purified of toxins by the expulsion of carbon dioxide. Vitality is increased. It minimizes stress and anxiety. It helps remove Ida and Pingala Nadis' blockages and balances them. Then it makes the prana flow in Sushumna Nadi (Saraswati, 1969).

2) Bhastrika pranayama (Bellows breath) This practice burns toxins. It makes the rapid exchange of air in the lungs. The metabolic rate is enhanced. It balances both the left and right cerebral hemispheres. The nervous system is strengthened. This practice is contraindicated in hypertension, heart disease, hernia, gastric ulcer, stroke, epilepsy, and vertigo (Saraswati, 1969).

3) Ujjayi pranayama (The psychic breath)-It is a kind of tranquilizing Pranayama. It has a heating effect on the body. It has a shooting effect on the nervous system. It calms the mind. It relaxes the individual at a psychic level and relieves insomnia. Introverted people should avoid this practice. People with heart diseases should practice it without bandhas or breath retention (Saraswati, 1969).

III. Bandha - It is meant to lock the prana by holding in particular areas and redirect their flow into Sushumna Nadi. It is practiced individually or along with Mudra and Pranayama (Saraswati, 1969).

Moola Bandha (Perineum contraction) - It stimulates the pelvic nerves. The urogenital and excretory systems are strengthened. It is effective in the treatment of psychosomatic diseases. It activates the endocrine system. One can control sexual activities by regularly practicing them (Saraswati, 1969).

IV. Mudra - Mudras are a combination of subtle physical movements. They alter mood, attitude, and perception and enhance awareness and concentration (Saraswati, 1969).

1) Ashwini Mudra (Horse gesture) - It redirects the pranic energy for sexual activities. People suffering from anal fistula should avoid this practice (Saraswati, 1969).

2) Vajroli Mudra (Thunderbolt/ Spontaneous psychic attitude)- It strengthens the urogenital system. It balances testosterone levels and sperm count. One can have control over premature ejaculation by practicing it. It tones up the endocrine system and helps to correct impotence. It is contraindicated in the case of urethritis (Saraswati, 1969).

V. Shatkarma- These are six purification practices such as Neti (Nasal cleansing), Dhauti (internal, head, and thoracic cleansing), Nauli (abdominal massaging), and Basti (yogic enema), Kapalabhati (frontal brain cleansing) and Trataka (concentrated gazing). They create harmony between Ida and Pingala Nadis. They result in physical and mental purification. They make the balance between physical and mental levels. They also balance the three Doshas or humours in the body like Kapha, Pitta, and Vata. These are practiced to purify the body's toxins (Saraswati, 1969).

1) Agnisara kriya / Vahnisaradhauti (Activating the digestive fire)- It stimulates the appetite and removes digestive disorders. It tightens the abdominal and pelvic muscles and reconditions the reproductive organs. It increases the energy levels. Depression, dullness, and lethargy are alleviated. This practice is contraindicated in hypertension, heart disease, acute duodenal ulcer, acute peptic ulcer, hyperthyroidism, and chronic diarrhea (Saraswati, 1969).

2) Nauli (Abdominal massaging)- It massages all the abdominal organs and strengthens the muscles and nerves of the abdominal and pelvic area. Heat is generated in the body by this practice. It activates the adrenal gland. Depression, hormonal imbalances, sexual disorders, urinary disorders, diabetes, lack of energy, and emotional disturbances are alleviated by this practice. It reshapes the body. The position of the inner organs of the body is

readjusted. Mental clarity and power are increased. This practice is contraindicated in heart disease, hypertension, hernia, cholecystitis, and acute peptic ulcer. People recovering from or having abdominal surgery should avoid this practice (Saraswati, 1969).

VI. Kundalini Yoga (Movement of energy)

Kundalini is the power residing in the Mooladhara chakra (Coccygeal plexus) like a coiled snake. It usually stays in a dormant state. It is the creative energy and energy of self-expression. It controls all the excretory and sexual functions of the human body. This chakra is physiologically related to the excretory, urinary, sexual, and reproductive organs. Those who want to practice the normal sexual act ideally must awaken the Mooladhara chakra first and then the Svadhisthana chakra (Lumbar plexus) by Kriyayoga and Vajroli Mudra (Thunderbolt attitude) (Sivananda, 2001).

VII. Svava Yoga- It states how the breath can control prana. It is called "Phonetical astrology": the "sound of one's breath". During the flow of Pingala (right nostril), it is auspicious for the men to engage in sexual intercourse or attract women.

VIII. Kriya Yoga - It is a higher practice to awaken the chakras and Kundalini. It develops the body, mind, and soul very quickly. Kriya practices are done by Vipareetakarani asana, Siddhasana, Uttanapadasana, Bhadrasana, Padmasana, Ujjayi pranayama, Moolabandha, Uddiyana bandha, Jalandhara bandha, Shambhavi mudra, Shanmukhi mudra, Vajroli mudra, Khechari mudra, Unmani mudra, Nasikagra dristi and Ajapajapa (Saraswati, 1984). Kriya yoga is meant to raise the level of physical and mental health and feeling of wellbeing to the highest level (Kualayananda and Vinekar 1963).

IX. Yoganidra - It gives complete physical, mental, and emotional relaxation. It is also called psychic or sleepless sleep, yogic sleep, and deep relaxation with inner awareness. It brings and establishes positive thoughts and emotions. This practice can remove negative thoughts and bad habits. It is very helpful for patients suffering from psychosomatic disorders. It normalizes the

body's function and the biochemical activities of the body. It reduces sleep requirements. It also reduces stress, anxiety, and tension and brings

calmness and clarity. The body and mind are revitalized. It manages psychological disorders (Saraswati, 1976).

Table 1 : Yoga therapies for male sexual dysfunction

| Sl. No. | Therapies | |
|---------|----------------|--|
| 1. | Asana | Pawanmuktasana Series 2 (Utthanpadasana, Chakrapadasana Pada Sanchalanasana, SuptaPawanmuktasana, JhulanaLurhakanasana, SuptaUdarakarshanasana, ShavaUdarakarshanasana and Naukasana) |
| | | Pawanmuktasana Series 3 (Rajju Karshanasana, Gatyatmaka meru Vakrasana, Chakki Chalanasana, Nauka Sanchalanasana, Kashtha Takshanasana, Namaskarasana, Vayu Nishkasana, Kawa Chalasana and Udarakarshanasana). |
| | | Surya Namaskara (Pranamasana, Hasta Utthanasana, Padahastanasana, AshwaSanchalanasana, Parvtasana, Ashtanga Namaskara, Bhujangasana, Parvtasana, AshwaSanchalanasana, Padahastanasana, Hasta Utthanasana and Pranamasana) |
| | | Sarvangasana and Halasana. |
| 2. | Pranayama | NadiShodhana, Bhastika and Ujjayi. |
| 3. | Bandha | Moola Bandha. |
| 4. | Mudra | Ashwini and Vajroli. |
| 5. | Shatkarma | Agnisara kriya, Nauli. |
| 6. | Svarayoga | During the right nostril flow, it is auspicious for the men to engage in sexual intercourse |
| 7. | Kriya Yoga | Advance practice that includes Viparectakarani asana, Siddhasana, Uttanapadasana, Bhadrasana, Padmasana, Ujjayi pranayama, Moolabandha, Uddiyana bandha, Jalandhara bandha, Shambhavamudra, Shanmukhi mudra, Vajroli mudra, Khechari mudra, Unmani mudra, Nasikagradristi and Ajapajapa. |
| 8. | Kundalini Yoga | Higher practice includes Kriyayoga and Vajroli mudra . |
| 9. | Yoga Nidra | A systematic relaxation method that includes eight steps: preparation, relaxation, resolution, rotation of consciousness, Breathing, image visualization, resolution, and finish. |

Conclusion

Regular yoga practice helps to maintain health and well being. The important achievement of yoga therapy is physical and mental purification and strengthening (Saraswati, 1969). The principles of yoga therapy are to purify the Nadis by removing toxins from the body, which are the cause of obstruction, reconditioning the neuro-muscular and glandular system to gain adequate immunity, and cultivate a proper psychological attitude to increase the ability to cope with a stressful situation (Gore et al., 2008). In addition, yoga therapy balances the nervous and endocrine systems, which directly influences all the other systems and organs of the body (Karamananda,

1983). One should practice all the above techniques daily to get the maximum therapeutic benefits.

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Commentary

Male sexual dysfunction and pathological jealousy: Clinical intricacies

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Sexuality, Male sexual dysfunction, Pathological jealousy, Sexual behaviour

Abstract

Sexual dysfunction among males is a common health concern seen with increasing ages. Premature ejaculation and erection disorders are some of the typical troubles that males encounter as part of the dysfunction. Pathological jealousy is a psychotic disorder manifested by the infidelity of a partner. A detailed history is one of the fundamental components of diagnosing and managing the issues. Nonetheless, several clinical intricacies make the assessment complex, such as sexual dysfunction, alcoholism, the extramarital affair of the partner, and pathological jealousy. Alcoholism may be associated with both sexual dysfunction and delusion of infidelity. Males with pre-existing sexual dysfunction may project their feeling through pathological jealousy, while the partner of an alcoholic person may have an extramarital relationship. Therefore, strong clinical inquisitiveness is warranted while dealing with male sexual dysfunction.

Introduction

Sexual dysfunction (SD) in males is classified as a disorder of arousal (erectile dysfunction), desire, or orgasm (premature or delayed ejaculation, or anorgasmia) depending on its occurrence in the sexual response cycle (Hatzimouratidis & Hatzichristou, 2007). There are varied reasons for dysfunction, including stress, depression, chronic medical disorders like diabetes, liver

diseases, heart diseases, kidney diseases, medications such as antidepressants or anti-hypertensive drugs, hormone imbalances, lower testosterone levels, neurological disorders, alcoholism, and drug abuse (Parmet Lynn and Glass, 2004). In addition, psychiatric and psychotropic disorders are related to sexual dysfunctions (Waldinger, 2015). These disorders can lead to relationship problems, stress or anxiety, lowered self-esteem, and unsatisfied sexual life among the partners, causing the feeling of pathological jealousy.

Alcoholism and infidelity

Infidelity is unfaithfulness towards the partner. Alcoholism and infidelity are linked to each other as the consumption of alcohol damages judgment capacity, and the person might usually act without thinking. Intimate inhibitions are

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reduced with the use of alcohol or other drugs. Individuals do not think about their partner when they are over-flirty with the opposite sex; hence, infidelity risk increases when this person drinks alcohol. On the other hand, alcoholism and infidelity are also associated with SD. Alcohol dependence interferes with the neurochemical messengers in the brain that helps in the erection of penis and the production of testosterone. This can lead to one of the commonest SDs, erectile dysfunction (ED). The decline of sexual desire for an individual is a complicated phenomenon and can happen when they feel the guilt of an extramarital affair (Bagarozzi, 2007). If the individual is struggling with any issues related to SD, it can also relate to the act of infidelity, which encourages the habit of alcoholism among men.

Liquor is said to be a diuretic and a depressant that can cause dehydration and a slowing effect on the central nervous system (CNS) (Milhorn, 1990). At the same time, infidelity is a psychological concern that can cause the feeling of distress among men leading to SD. Most men refuse to take the treatment of SD due to extramarital affairs or a sense of insecurity. Although, above all these findings, they must be prepared for the diagnosis and its cure. Dr. Jacob Rajfer (Professor of urology with David Geffen School of Medicine, Los Angeles) concluded that only a few men out of the three-fourth attend the clinical practice. Hence, lesser men are willing for the diagnosis and treatment. (Doheny, 2013). Alcohol-related ED is reversible, and the symptoms are withdrawn once alcohol consumption is stopped. Cognitive-behavioral therapy and family therapies are useful for reducing alcohol dependence and SD. These therapies and good communication can also help and decrease the partners' unfaithfulness. Once men are prepared for the treatment, there are different options such as medications (sildenafil, vardenafil, and tadalafil), hormone therapy, psychological interventions, and mechanical aids (vacuum devices and penile implants) for the treatment of SD.

Sexual dysfunction and pathological jealousy

Pathological or morbid jealousy is a delusional disorder that occurs when a person thinks that

the partner or spouse is disloyal based on some everyday events (Kingham and Gordon, 2004). Individuals suffering from this condition correlate strongly with cyberstalking, violence, SD, poor mental health conditions, and alcoholism. Pathological jealousy is expressed in the form of obsessions or delusions. Sexual jealousy often results in the murder of the partner (Zheng and Kendrick, 2021). Morbid jealousy can result from chronic alcoholism, drug addiction, neurologic disorders, or personality disorders interconnected with SD (Kingham and Gordon, 2004). Men with pre-existing SD may project their emotions through pathological or morbid jealousy. Males search for extramarital relations being jealous as they are susceptible to ED displaying forms of violence and insults towards their partner. The serious thought of jealousy can increase the testosterone levels in males, which is a risk factor for heart or vascular diseases impairing sexual functions. Morbid jealousy potentially appears as a reaction to the already-established damaged and diminished sexual function. This existing thought of SD among men can result in serious psychological impacts like depression and anxiety, making them feel more helpless.

Extramarital affair and pathological jealousy

Whatever the cause of SD, the psychosocial impact that this disorder leaves on individuals is significant. Extramarital affairs (EMA) can result from various elements such as revenge, sexual addiction, SD, cracks in the current relationship, or lack of proper communication between the partners. Morbid jealousy is activated due to partners' relations with the opposite sex and sexual discontentment after marriage (Ram et al., 2019). People with sexual dysfunctions may project their thoughts that their partners are not happy. They may have SDs previously due to various reasons such as stress, depression, medications, diseases, alcoholism, drug abuse, or hormonal imbalances. This makes them search for EMAs, which can cause personal and social impacts on the individuals. Men who are married have various reasons for EMA. Ram et al. (2019) stated that socioeconomic status, intermediate literacy level, and psychiatric conditions could cause jealousy. However, there is no evidence of pathological jealousy in EMA due to socio-

cultural elements such as political organizations, belief systems, or economic systems and unexpected outcomes (Ram et al., 2019). Morbid jealousy can lead to irritation and defensiveness among the partners. Ultimately, the trust in the relationship is hampered by stress, anxiety, and physical symptoms among both the sexes. However, men maintaining another relationship tend to lack the peacefulness of life, causing hormonal imbalance, lower testosterone levels, alcohol dependence, drug abuse, intake of any medications due to any medical conditions, or mental health issues. All these factors contribute to different conditions of SD. Even though females stood higher in jealousy than men, men showed more infidelity in the relationship. A General Social Survey by the Institute for Family Studies reported that 20% of men maintain EMAs other than their spouses even though the gender gap varied by age (Wang, 2018).

Conclusion

This article focuses on the clinical intricacies of male sexual dysfunction and pathological jealousy. The most common form of dysfunction seen is erectile dysfunction, where alcoholism is a common cause and is reversible when the adverse habits are intercepted. Even though females show more jealousy than males, males tend to engage more in infidelity. Extramarital relationships and pathological jealousy are the main consequences of sexual dysfunction.

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Letter to the Editor

Sexual history taking in male psychiatry OPD : Perspective of a nurse

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Keywords: Sexual history taking, Male psychiatry OPD, Nurse

Sexual history taking is a sensitive method, and a nurse should prepare herself before interviewing a patient with a sexual problem. This commentary article draws the attention of all the nurses working in a psychiatric setting and dealing with patients with sexual issues. History taking is the fundamental function of a nurse, but sexual history taking is a tough nut to crack. Sexual history taking is an integrated part of the general history taking from a psychiatric patient along with birth history, childhood history, developmental history, educational history, play history, pubertal history, substance abuse history, marital history, fantasy life history, and so on. The majority of male patients with sexual problems are visiting psychiatric OPD. However, to reduce the stigma and develop more trust in nurses, there is a need for more and more understanding and interviewing skills in nurses.

A few barriers nurses commonly face while taking sexual history and guidelines for gathering more accurate sexual history. Levels of comfort and confidence in discussing sexuality are also

the most needed criteria to get sexual history from patients. Hence, sexual history taking is the most crucial and sensitive area of assessing a patient having sexual problems, and nurses need more intense knowledge and skill to hit the nail on the head. There is a need for continuous education in the field of sexuality for nurses working in a psychiatric setting and dealing with patients having sexual problems so that they can do a thorough assessment of the sexual issues of patients and help consultants report an actual potential problem of the patients.

Sexual history taking in male psychiatric OPD: Perspective of a nurse

- ◆ Exploring the patient's sexual history is a sensitive method that should be taken seriously. Before the interview, it is important to take a few minutes to prepare. For a brief sexual history, begin interviewing the patient with a request for the main complaint; A straightforward approach would work best (Saleh, 2020). Here are some common answers given by nurses as to why they fail to take an adequate sexual history (Singh, 2018)
- ◆ Strange feeling: In the conservative society of India, this is considered inappropriate; therefore, without adequate training, nursing staff feel embarrassed to ask questions about their sexual history.

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- ◆ The time limit in the overcrowded outpatient department (OPD)
- ◆ Inability to develop rapport due to poor soft skills and negative attitude.
- ◆ Lack of privacy in OPD

Asking for sexual complaints is irrelevant because it is often unrelated to the patient's main complaint. Most staff are not sure what to do with the answer and what the next question should be

- ◆ Inadequate training and education in sexual health at the undergraduate level
- ◆ Worry that the patient might feel bad or embarrassed to answer.
- ◆ What will the patient think of them?
- ◆ What if the questions are treated as misconduct?

Significant barriers exist between a nurse's ability to ask questions and a patient's ability to respond. Nurses are comfortable talking about all systems, and patients are asked questions without worry or inhibition. Similarly, the patient feels little or no hesitation in answering truthfully on these tests. The same environment is not usually present with sexual history taking (CDC, 2018).

How to take a sexual history?

Here are some basic principles that should be followed for taking an adequate sexual history, which is as follows:

- ◆ Be a good listener
- ◆ Assure of patient's confidentiality
- ◆ Know the patient as an individual (e.g., partner, children, job, and living conditions)
- ◆ Patients will not discuss their sexual complaints unless they are comfortable with their consultants. Therefore, developing a relationship with one's patient is a pillar of sexual history.
- ◆ Be gender sensitive at all times and not

discriminate against the patient based on their sexual preferences

- ◆ It is necessary to use simple language for the patient to understand. Use words in the patient's local language as far as possible. Rephrasing the words for better understanding should be done. Hesitation in asking the patient what it means to say should be avoided (CDC, 2018).
- ◆ Make no assumptions about anything
- ◆ Charts, pictures, pen, and paper, can be used to explain the minimum details
- ◆ Do not be critical or judgmental at anytime
- ◆ One must know where to stop. Pay attention to someone's reactions and be sensitive to nonverbal cues (Huang et al., 2013).
- ◆ Involve partners, if necessary, after discussion with the patient
- ◆ If the patient is not ready or uncomfortable continuing the discussion, reduce the debate further. If the patient is comfortable, try on the next visit.
- ◆ The length of time included in the patient's "history" is not fixed, but a general rule of thumb is to ask about the past 12 months. It is important to ask about the patient's gender expression, gender identity, sexual orientation, and preferences. It is important not to assume heterosexuality when obtaining a sexual history. Getting information about sexual behaviour and types of sexual behaviour is a part of a sexual assessment.
- ◆ Five areas need to be discussed thoroughly with the patient, which the 5P can cover: Partner, Practice, Protection from STDs, Past history of STDs, and Pregnancy details (Huang et al., 2013).
- ◆ In particular situations or circumstances, one needs to ask some additional questions.
- ◆ Also, ask about the history of sexual abuse
- ◆ In primary care, reassure patients that these questions are asked of all adults, regardless of their age or marital status; insist on privacy
- ◆ Sometimes, simply inquiring about patients'

sexual practices helps identify their sexual problems and gives an idea about how to proceed with treatment.

- ◆ Start the next session with the revision of the previous session. Listen carefully to the myths of patients. The patient must feel that the physician is interested
- ◆ Try to counsel and psycho-educate them about their myths and misconceptions. The approach to such problems should include the involvement of partners, if possible

Levels of comfort and confidence in discussing sexuality

Most nurses either feel uncomfortable discussing sexuality-related issues with patients or insecure in their ability to discuss sexuality with patients, or both. In an Irish study on mental health nurses' responses to issues of sexuality, nurses desexualize patients and do not fully accept their sexual rights. Nurses report a lack of positive and effective role models (Quinn et al., 2011). Nurses can act as surrogates and role models to establish and maintain effective communication that can help the clients to communicate freely about their sexual health and related problems (Higgins et al., 2008).

Magnan et al. reported that nurses who are more confident in their ability to address patients' sexual concerns are also more likely to take time to discuss sexuality with patients. According to Quinn et al., age, training, and experience contribute to ease and belief in bringing up the topic of sexuality with patients (Magnan et al., 2005).

Julien et al. reported similar findings where participants under the age of forty have more barriers than those with less than ten years of experience discussing sexuality with patients compared to older nurses with more experience (Julien et al., 2010). If it is hard for nurses to discuss sexuality, it is also hard to discuss sexuality with patients. If society influences how we see sexuality, it is fair to assume that nurses and patients are equally affected within the same society in terms of sexuality. Patients want their nurses to be technically competent and are more

concerned with physical than psychological care (Guthrie, 1999). Although there may be patients for whom sexuality may not be an urgent issue, there may be patients for whom it may be too much of an issue. Therefore, the opportunity for discussion should be available to all patients. Contemporary nurse education does not prepare nurses to deal with the sexuality of patients. It does not challenge the beliefs and values about sexuality that nurses have acquired through life experiences that are not based on objective evidence and reflects normal prejudice and generalization (Magnan et al., 2005; Zeng et al., 2012). Sexual history taking and sexual counseling should be included in nurse education programs so that nurses learn to accept sexuality as a clinical issue and feel confident in their ability to discuss sexuality (Julien et al., 2010). Nurses need to be imparted education in sexuality and communication skills so that the knowledge learned can be put into practice (Zeng et al., 2012). Education strategies must consider nurses' communication style and socio-cultural beliefs and values, focusing on knowledge, skill, comfort, and confidence levels. In addition to education in sexuality and related skills such as communication, teaching, and counseling skills, the focus of education should be aimed at helping nurses to be aware that everyone has personal biases and that part of learning is to provide a non-judgmental environment by setting the professional role apart from patient care.

Conclusion and recommendation

Hence, sexual history taking is the most crucial and sensitive area of assessing a patient having a sexual problem. Nurses need more intense knowledge and skill to hit the nail on the head. There is a need for continuous education in the field of sexuality for nurses who are working in a psychiatric setting and dealing with patients having sexual problems so that they can do a thorough assessment of the sexual difficulties of patients and can help consultants to report an actual potential problem of the patients.

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