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Female Sexual Dysfunction

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Sexuality is an important and integral aspect of human health. It is a dynamic phenomenon. The perception, experience, attitude and expression about sexuality changes across genders, ages, cultures as well as among individuals. Sexuality as a health domain is less frequently discussed due to the taboo associated with it. Among the existing scientific literature on sexuality, much is talked about male sexuality & sexual dysfunctions, however the literature on the sexuality of the female counterpart are scarce. Female sexuality is influenced by various bio-psychosocial and cultural factors. The biological role of reproduction and child birth is only one aspect of female sexuality. Thus any sexual dysfunctions of females need to be paid equal attention considering the psycho-social aspect.

The ancient Indian medical literature provides details of female sexual dysfunctions in the form of loss of libido and dyspareunia and its treatment. Ayurveda has listed factors that can effect sexual functioning of females including effect of menopause. There was lack of standardized definitions and understanding of *Female Sexual Dysfunction* (FSD), until recently when FSD have been given place in diagnostic classifications. Diagnostic and Statistical Manual of Mental Diseases (DSM-5), classifies female sexual dysfunction into female orgasmic disorder and genitopelvic pain or penetration disorder (including both dyspareunia & vaginismus). In the developing world, the

prevalence of FSD may range from 43 to 69% in the general population. However, women occasionally consult for care directly for their sexual dysfunction. Females usually present with non-specific symptoms of pelvic pain, distress about menses and genito-urinary complaints. Thus, taking a brief sexual history in a clinical setting can be very effective and might facilitate a female patient to discuss her sexual concerns. There are many methods to evaluate FSD including questionnaires, structured interviews and detailed case histories. Sexual history is also important in teenage and adolescent females as they might be suffering from painful menstruation, chronic pelvic pains, imperforate hymen or other possible anatomical defects. They also run a risk of psychological distress with concepts of virginity, teenage pregnancy or any sexually transmitted disease.

Similar transition is seen during menopause when falling levels of estrogen can cause night sweats, hot flashes which can directly affect libido and their sense of sexuality & self. Thus, identifying and managing FSD is

of crucial importance. A detailed history of medical and psychosocial factors can be very helpful in managing FSD. Some drugs are known to cause FSD and their dosages can be reduced or substituted with another non-offending drug. Sometimes pharmacological agents like estrogen, transdermal testosterone and trial of Bupropion and Sildenafil can be attempted. However, non-pharmacological therapy like Yoga, Cognitive Behaviour Therapy, Couple Therapy, Pelvic floor exercises, Relaxation Therapy and Masters and Johnsons Therapy have also been very useful.

In India, sexuality is considered as a taboo and sexual matters are generally not discussed, more so ever the problem of sexuality and female sexual dysfunctions are not yet routinely assessed and addressed by health care professionals. Thus, there is a need to create awareness regarding FSD and sensitize health care systems for its evaluation & management.

Sincerely
Dr. Bandna Gupta
1st June 2018

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Description of Sexual Dysfunction in Females in Ancient Medicine

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ABSTRACT

Sexual dysfunctions tend to affect the well being of individuals. Female sexual dysfunction refers to problems of sexual desire, orgasm, arousal and sexual pain. Most of the studies on sexual dysfunctions primarily focus on men than on women. The present article was written to understand the conceptual changes about female sexual dysfunctions in various time periods. It was seen that not much focus was given to problems of females in ancient times. They were considered to be responsible for unholy desires of men and marriage was considered to be the solution of problems present in females. With the advancements in the field of psychiatry, female sexual dysfunctions came to be understood in a better way and were also included as a separate disorder in the Diagnostic and Statistical Manual.

KEYWORDS: Sexual Dysfunction, Female Sexual Dysfunction, Diagnostic and Statistical Manual

INTRODUCTION

Sexual functions in human are an important element of life, be it for species propagation or quality of life. Sexual dysfunction can often lead to reduced quality of life. Sexual dysfunction refers to problems that occur during the sexual response cycle that prevents a person from experiencing satisfaction from sexual intercourse [1]. Masters and Johnson in 1966 described a six- phase sexual response in women based on i) desire, ii) arousal iii) lubrication iv) plateau v) orgasm and vi) resolution [2]. First, 3 components being interdependent and are responsible to achieve plateau, orgasm and resolution. For the successful achievement of sexual response, desire is the basis [3]. Female Sexual Dysfunction (FSD) is defined as “a disorder of sexual desire, orgasm, arousal and sexual pain that results in significant personal distress” [4].

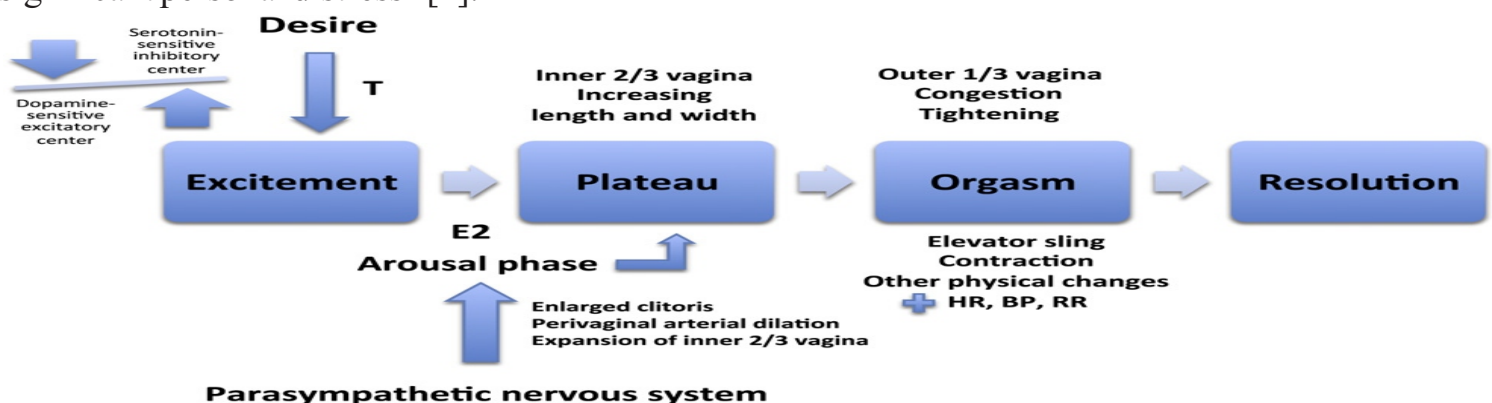


Fig. 1. Physiological changes in the current model of the female sexual response cycle [5].

BP : blood pressure; HR : heart rate; RR : respiratory rate.

However, it is really difficult to estimate prevalence of Female Sexual Dysfunction (FSD) compared to Male Sexual Dysfunction (MSD). American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorder classifies sexual response based on Kaplan in 1979 into four phases: Phase I desire or libido; Phase II arousal or excitement; Phase III orgasm or climax; Phase IV refractory or resolution. Today, FSD is regarded as a multifactorial and progressive problem affecting approximately 19% to 50% of the female population [6,7].

HISTORY

Female sexual problems date back to the time of Hippocrates. The problem of melancholic madness was considered to affect the young girls and marriage was considered as the only possible cure for the same [8].

During the seventeenth century and even before, uncontrolled sexuality was considered as sexual problem associated with females. It was then known as 'furoruterinus' and later on came to be known as 'nymphomania'. Many cases were reported of the same in various countries like Italy, France, Spain, Portugal etc. It has been defined as "immoderate burning in the genital area of the female, caused by the surging of hot vapour, bringing about an erection of the clitoris" by Italian physician, Girolamo Mercuriale in the sixteenth century [9].

In the eighteenth century, sexuality was understood as per the teachings of the church. What was normal and what was not normal was defined by these teachings. The females were considered responsible for the unholy desires of men and resulted in castigation of females.

With the beginning of the 'Victorian Era', the status of women was reduced to that of a wife, a mother and a lady [10]. They did not have high position in the society. They were given only one goal and that was marriage. They could not even support their family economically. A lot of value was given to moral purity and virginity. As per those times, pathologies started when women crossed these boundaries. Some of the problems mentioned are: masturbation, hysteria and nymphomania. These were considered to be problems of oversexuality.

The current understanding of female sexual dysfunctions is influenced by the works of twentieth century [11]. By this time psychiatry had become professionalized and medicalized. Psychoanalytic theory as given by Sigmund Freud was popular during this time. Psychopathology during this period was considered as a result of too much or too little desire. As per Freud, lack of or non-possession of penis was considered by the females as a loss. This experience resulted in unresolved conflicts and neurosis in females [11]. Desire for clitoral stimulation by women rather than vaginal intercourse was considered to

result in neurosis, isolation, and social disintegration. Feminism and lesbianism was also considered as problems and were linked to clitoral stimulation [12,13].

The Ayurveda considers genital secretion to result in progressive weakness or even death. The females of South Asian countries have reported complaints of dizziness, backache and weakness caused by vaginal discharge [14]. These women usually presented with the complaints of safed pani (white water), dhatu or swet pradhar. This was considered as a vital fluid of the body by women and was based on the belief which said that 100 drops of blood is required to make a drop of safed pani [15,16]. Similar beliefs about vaginal discharge are present among Muslim women as well [17, 18].

DSM & IT'S CLASSIFICATION

The connotations regarding female sexual problems as mental disorders remained an important topic of discussion by the American Psychiatric Association's Diagnostic and Statistical Manual in the post war period.

First edition of DSM (1952) included Sexual Deviation (including homosexuality, tranvestism, pedophilia, fetishism and sexual sadism) under the domain of Personality Disorders. Problems of impotency and frigidity were included in the category of 'Psychophysiological autonomic and visceral disorders' [19]. The second edition DSM (1968) was similar to that of first, it has just added dyspareunia and

impotence to the list of examples [20].

In DSM III of 1980, importance was given to biological psychiatry and had a separate chapter on 'Psychosexual Disorders'. This included a category of gender identity disorders (transsexualism and gender identity disorders), and paraphilias (fetishism, transvestism, pedophilia, voyeurism etc.) and psychosexual dysfunctions for women which included the following: inhibited sexual desire, inhibited sexual excitement, inhibited (female) orgasm, functional dyspareunia, functional vaginismus, Atypical psychosexual dysfunction [21]. The DSM -III - R of 1987 changed 'Psychosexual Dysfunctions' to 'Sexual Dysfunctions' [22].

DSM-IV of 1994 remained all the more the same except that Inhibited Orgasm becomes Orgasmic Disorder. It also added Sexual Dysfunction due to a general medical condition- Induced Sexual Dysfunction [23]. According to DSM-IV TR, sexual dysfunction is characterized by a disturbance in the processes of sexual response cycle or by pain associated with sexual intercourse [24].

DSM 5, published in 2013, added gender specific sexual dysfunction and female disorders of desire and arousal were clubbed into single category of Female Sexual Interest/Arousal Disorder. It also states that a sexual dysfunction must have persisted for a minimum of 6 months, causing distress excluding a non-sexual mental disorder or severe stressors [25].

CONCLUSION

Female Sexual Dysfunctions have been highly prevalent from the ancient times but have not been the topic of concern for many years. Understanding of female sexual dysfunctions clearly states that males and females have different dysfunction. However, now it is being researched a lot but more and more also need to be explored. Emphasis should be given not only to physical but also to psychological reasons associated with these.

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Menopause and Sexuality

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ABSTRACT

Menopause heralds the end of the female reproductive cycle. It is marked by a number of hormonal and psychological changes, many of which have direct implications on a woman's sexual well-being. A progressive decline in sex hormones like oestrogen and testosterone affect both the frequency and the quality of sexual experiences in menopausal women. Sexual dysfunction in menopausal women is a relatively understudied area which is becoming increasingly relevant, with the changes in population dynamics and attitude towards sexuality. A number of biological, psychological and socio-cultural factors aggravate the sexual dysfunction in this population. Treatment options include both pharmacological and non-pharmacological modalities. It is prudent of a clinician to routinely assess for sexual dysfunction in menopausal women, and to refer her to a psychiatrist for detailed evaluation and management.

KEYWORDS: Menopause, Sexual Dysfunction, Arousal Disorder, Organic Disorder, Penetration Disorder

INTRODUCTION

Menopause corresponds to the end of the female reproductive cycle. It is characterised by the cessation of the activity of ovarian follicles internally and it is externally manifested by a complete cessation of menstrual flow for a period of at least 12 consecutive months [1]. Menopause is associated with several biological and psychological changes, with gradually progressive hormonal instability. Some of the common complaints these women present with include vasomotor symptoms, urogenital atrophy, increased risk of cardiovascular disease, osteoporosis and sexual dysfunction, which is the topic of discussion of this chapter [2].

NEURO-ENDOCRINE CHANGES DURING MENOPAUSE

The menopausal transition is characterised by endocrine changes that are secondary to reducing number of ovarian follicles. The fall in the number of ovarian follicles is the most consistent factor during menopausal transition. Late reproductive ageing has been recognised as a rise in early cycle FSH (Follicular Stimulating Hormone) level beyond the normal levels as seen in young women with regular menstrual cycles. Elevated FSH is also associated with reduction in levels of Inhibin B. Inhibin B level reduction is considered to be the first neuroendocrine marker of early menopausal transition and is a

marker for the function of antral follicles. Elevated FSH levels also help maintain levels of Estradiol (E2), till late in menopausal transition. At the level of the HPA (Hypothalamic - Pituitary Axis), there is a failure of positive and negative feedback of oestrogen. Menstrual cycles shift from ovulatory type to non-ovulatory type in the last 30 cycles prior to the Final Menstrual Period (FMP). Menopause is also associated with a gradual fall in testosterone as well in females which also leads to worsening of sexual dysfunction. It is the deficiency in oestrogen that causes a milieu of symptoms ranging from vasomotor disturbances, urogenital atrophy, osteoporosis, cardiovascular diseases, psychiatric morbidity like anxiety and depression and sexual dysfunction [3].

SEXUALITY AND MENOPAUSE

Sexuality is characterised by anatomical, physiological and psychological conditions that pertains to each gender. Human sexuality in particular, is influenced, apart from biological factors, by socio-cultural factors, religious beliefs, morality and core beliefs that differ from one individual to another [3]. Studies have consistently showed a decline in sexual activity with advancing age in both men and women. In women, in particular, the occurrence of menopause affects various components of sexual activity such as the desire, frequency and

overall pleasure from the experience. Studies reveal that sexual dysfunction is known to affect almost 68-85% of post-menopausal women [4]. Sexual dysfunctions in post menopausal women is also known to affect self esteem and quality of life [5].

FACTORS AFFECTING SEXUAL FUNCTIONING IN MENOPAUSAL WOMEN

Biological Factors: As mentioned earlier, menopause is characterized by gradual decline in sex hormones, mainly oestrogen and testosterone in women. Decline in oestrogen leads to reduced lubrication of vaginal walls, thinner vaginal mucosa and hence affecting the sexual functioning directly. Indirectly, oestrogen deficiency leads to post-menopausal syndrome, psychological features like anxiety and depression, which can also affect sexual functioning. Lack of testosterone may lead to lack of sexual desire [5].

Other biological factors that play role are chronic co-morbid conditions like diabetes mellitus, hypertension, cardiovascular illnesses, hypothyroidism etc. which may affect sexual functioning either directly by affecting the neuro-vascular and endocrine mechanisms or indirectly by leading to chronic suffering and debilitation. Many medications, commonly used in older adults can add to sexual problems further. Antihypertensive medications are the commonest culprits.

Various other groups of medications like cardiovascular drugs (such as disopyramide), and anticancer agents can also cause SD (Sexual Dysfunction). Many psychotropic medications can also cause SD (Sexual Dysfunction). Antipsychotics, antidepressants, benzodiazepines and mood stabilizers are known to cause varieties of SD [5].

Psychological Factors: There are a few psychological theories that explain the sexual decline seen in menopausal women. The *self-perception* theory states that if the partner is usually the initiator in sexual activity, a woman may perceive herself as having lower sexual desire as compared to her partner. The *over-justification* hypothesis states that if sexual activity in these women are associated with an external reward (complaining husband, less fighting at home), it will affect the woman's sexual desire adversely as she will start associating the sexual activity more with the reward than the intrinsic pleasure she would derive from the experience [6]. The presence of psychiatric co-morbidities such as anxiety and depression may significantly reduce sexual desire due to pervasive mood state.

Socio-cultural Factors: Socio-cultural factors played a crucial role in the perception of sex amongst older men and women and varied depending on age, race and religious beliefs. As women reach menopause, there is a gradual but certain

decline in sexual activity. There are multiple causes for this association between age, menopause and sexual function. The younger population has always viewed older women as motherly and the image that comes to one's mind is not sexual. This attitude led to the belief that as one grows older one is less sexually active as compared to when they were younger. However there is a socio-cultural paradigm shift, at least in west. Current generation of menopausal women belongs to the rebellious 'Baby Boomer Generation of the 1960s' which was associated with freedom of speech, religion and sexuality [7]. The women attaining menopause today are very different from their own mothers and grandmothers when they attained menopause. Over the years, there has been significant interest in defining and assessing sexual health and sexual well being of the aging population. This can be partly due to a change in the age pyramid structure due to increased life expectancy and also due to a change in attitudes amongst people while discussing sexuality amongst the elderly. The availability and the quality of a stable relationship is one of the most important factors impacting sexual functioning in women of menopausal age. Other relationship characteristics such as intimacy, love and anger towards the partner, the duration of the relationship, as well as overall health of the partner and sexual desire in the partner also played a role in the sexual activity amongst older

women. Past history of sexual violence also impacted sexual functioning negatively amongst women in menopause. Life events too were known to impact the sexual activity in women, with sexual agency, no fear of pregnancy and no children in the house positively impacting sexual desire. Parents assuming the role of care-givers, retirement and financial changes in this phase of life as well as new onset illness and death could negatively affect sexual desires.

MENOPAUSE AND THE FEMALE SEXUAL RESPONSE CYCLE

The sexual response cycle was described as having 4 stages by William Masters and Virginia Johnson in 1966. In 1980, Zilbergeld and Ellison described a fifth stage, i.e. Desire [5]. This encompasses the physiological and psychological changes that underlie sexual response. The stages of sexual response cycle and how each stage is affected by menopausal changes are described in Table No.1.

SEXUAL DYSFUNCTION IN MENOPAUSAL WOMEN

Some of the commonly seen disorders of Sexual function in menopausal women are:

Female Sexual Interest/Arousal Disorder: It is characterised by reduced libido in menopausal women secondary to hormonal changes and self perceived loss of beauty with increasing age. The DSM-

5 criteria [8] for this disorder is as follows:

A. Lack of, or significantly reduced, sexual interest/arousal, as manifested by at least three of the following:

1. Absent/reduced interest in sexual activity.

2. Absent/reduced sexual/erotic thoughts or fantasies.

3. No/reduced initiation of sexual activity, and typically unreceptive to a partner's attempts to initiate.

4. Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (approximately 75%-100%) sexual encounters (in identified situational contexts or, if generalized, in all contexts).

5. Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (e.g., written, verbal, visual).

6. Absent/reduced genital or non-genital sensations during sexual activity in almost all or all (approximately 75%-100%) sexual encounters (in identified situational contexts or, if generalized, in all contexts).

B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.

C. The symptoms in Criterion A cause clinically significant distress in the individual.

D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress (e.g. partner violence) or other significant stressors and is not attributable

to the effects of a substance/medication or another medical condition.

The criteria also comes with specifiers like:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual function.

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

Severity specifiers are:

Mild: Evidence of mild distress over the symptoms in Criterion A.

Moderate: Evidence of mild distress over the symptoms in Criterion A.

Severe: Evidence of severe or extreme distress over the symptoms in Criterion A.

Treatment of this disorder begins with counselling of the woman, to reduce the stigma associated with sexuality in the older population. This should be combined with Hormonal Replacement Therapy and Androgen Therapy which helps with restoring libido. Side effects such as virilisation and clotting factor deficiency must be watched out for, when starting a patient on androgen therapy.

Female Orgasmic Disorder: It is defined as a persistent or recurrent delay in achieving orgasm or an absence of orgasm from normal sexual excitement. It is

usually seen in women of all ages. However, women in menopause who tend to experience these problems do not seek treatment for the same, as they feel it does not interfere with their relationship. The DSM -5 Criteria for this disorder [8] is as follows:

A. Presence of either of the following symptoms and experienced on almost all or all (approximately 75%-100%) occasions of sexual activity (in identified situational contexts or, if generalized, in all contexts):

1. Marked delay in, marked infrequency of, or absence of orgasm.

2. Markedly reduced intensity of orgasmic sensations.

B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.

C. The symptoms in Criterion A cause clinically significant distress in the individual.

D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress (e.g., partner violence) or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition.

Specifiers:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual function.

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

Specify if: Never experienced an orgasm under any situation.

STAGES OF SEXUAL RESPONSE	NORMAL CHANGES DURING EACH STAGE	EFFECT OF MENOPAUSE ON EACH STAGE	RESULTING SEXUAL DYSFUNCTION
Desire	Corresponds to the natural urge with which one responds to or seeks sexual activity. It is controlled by the limbic system in the brain and the hormone responsible is testosterone.	Reduced testosterone resulting in Reduced Libido	-Hypoactive Sexual Desire Disorder -Sexual Aversion Disorder
Arousal or Excitement	Desire paves way for the second stage of arousal. This stage occurs as a result of either sexual fantasies or direct physical stimulation. It is characterized by increased blood flow into the genital tissues leading to clitoris engorgement and vaginal lubrication.	-Delayed Arousal (due to reduced testosterone) -reduced vasocongestion of pelvic floor musculature -reduced lubrication (estrogen deficiency) -thinner vaginal mucosa -lesser swelling of clitoris -Shorter, narrower Vagina	Female Sexual Arousal Disorder
Orgasm	Peaking of sexual pleasure associated with release of sexual tension and rhythmic contraction of perineal and pelvic floor muscles. Ejaculation in men. Sense of euphoria in both the sexes. Women and are capable of having multiple, successive orgasms, whereas men have refractory period of few minutes to hours.	-Reduced strength and number of pelvic floor contractions. -Lesser pleasure derived from orgasm.	-Anorgasmia -Dyspareunia

Table No. 1: stages of sexual response cycle and effect of menopause on these stages.

The PLISSIT Model
<p>P-Permission giving: Allowing the patient to bring up sexual complaints, and to continue regular healthy sexual activities for e.g. masturbation.</p> <p>LI-Limited Information: Giving the patient relevant but limited information about the anatomy and physiology of sex.</p> <p>SS-Specific Suggestion: Making specific suggestions to the patient and her partner using the complaints she has presented with, for e.g. specific positions considering the physical limitations.</p> <p>IT-Intensive Therapy: To refer the patient to a specialist – a gynaecologist/sex therapist/psychiatrist/geriatric psychiatrist for detailed evaluation and treatment.</p>

Table No. 2: The PLISSIT Model

Specifiers of severity

Mild: Evidence of mild distress over the symptoms in Criterion A.

Moderate: Evidence of moderate distress over the symptoms in Criterion A.

Severe: Evidence of severe or extreme distress over the symptoms in Criterion A.

Support groups can help in psycho education of the couple regarding the problem. Treatment would include sex therapy, with a focus on self stimulation using masturbation using a vibrator or clitoral stimulation. On having an orgasm using this technique, the couple is then taught sensate focus therapy (explained below) to include it in their sexual activity.

Genito-Pelvic Pain/Penetration Disorder:

Dyspareunia refers to painful sexual intercourse. It is a common problem seen in menopausal women due to gradual urogenital atrophy. Vaginal dryness, vestibulitis, vulvodynia and surgical treatment for cancer of the urogenital tract are some of the causes associated with dyspareunia in menopausal women. The DSM -5 criteria for this group of disorders [8] include:

- A.** Persistent or recurrent difficulties with one (or more) of the following:
1. Vaginal penetration during intercourse.
 2. Marked vulvovaginal or pelvic pain during vaginal intercourse or penetration attempts.
 3. Marked fear or anxiety about vulvo-vaginal or pelvic pain in

anticipation of, during or as a result of vaginal penetration.

4. Marked tensing or tightening of the pelvic floor muscles during attempted vaginal penetration.

- B.** The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.
- C.** The symptoms in Criterion A cause clinically significant distress in the individual.
- D.** The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of a severe relationship distress (e.g., partner violence) or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition.

Specify whether:

Lifelong: The disturbance has been present since the individual became sexually active. **Acquired:** The disturbance began after a period of relatively normal sexual function.

Specify current severity:

Mild: Evidence of mild distress over the symptoms in Criterion A.

Moderate: Evidence of moderate distress over the symptoms in Criterion A.

Severe: Evidence of severe or extreme distress over the symptoms in Criterion A

Treatment starts with gynaecological examination to treat the underlying

condition. Psycho-education and sex therapy of the couple must be done to try and engage in other forms of sexual activity such as foreplay.

ASSESSMENT OF SEXUAL FUNCTIONING IN MENOPAUSE

Assessment of sexual functioning in a menopausal woman would include:

1. History taking:

- A. Medical History:** A thorough and detailed evaluation of the patient's medical records would shed light on co-morbid medical illness that could be contributing to sexual dysfunction.
- B. History of Psychiatric Illness:** Psychiatric illness such as depression and anxiety spectrum disorders may contribute to existing sexual dysfunction in menopausal women. In addition to this, any psychotic illness with gross personal and social impairment would also prevent a woman from having a normal sex life.
- C. Treatment History:** The woman must be asked about all the medications she has been taking, as several of these have sexual dysfunction as a side effect. Details about dosing, duration of illness, duration of treatment with that medication and prior response to other medication must be included.
- D. Sexual History:** A strong rapport must be established between clinician and the patient before this part of history taking. The clinician must be sensitive about the age of the patient, educational and socio-cultural

background while asking questions. Sexual history must include knowledge about sexual practices, current beliefs, any socio-cultural taboos and sexual complaints of the patient.

2. Examination:

- A. General physical examination of the patient** must be done for any signs of debilitating medical illness that may contribute to sexual dysfunction.
 - B. Gynaecological Examination:** It should include examination of tissues of the urogenital tract, their condition and any co-morbid infection or malignancy that may play a role in causing sexual dysfunction.
 - C. MSE:** A detailed Mental Status Examination to rule out any psychiatric causes of sexual dysfunction must be done.
- 3. Laboratory Work-up:** Routine blood tests including a complete hemogram, renal function tests, thyroid function tests and urine routine examination must be done. A scan to assess the patency of the uro-genital tract may be done if any anomaly is suspected. Prolactin and testosterone levels may also give a clue about underlying cause of sexual dysfunction.

TREATMENT OF SEXUAL DYSFUNCTION IN MENOPAUSAL WOMEN

Non-Pharmacological Interventions

It is essential to build a rapport with the patient and her partner as a first step

to make them understand the problem, the fact that they are not alone and the treatment options available.

One useful non-pharmacological interventional approach in primary care set up is PLISSIT Model [9]. (Table No. 2)

Sex Therapy is based on the principles of Cognitive and Behavioural therapy [5].

Cognitive therapy: includes changing the negative cognitive distortion that an individual has about their role during sexual activity and changing it towards a more positive role.

Behavioural therapy: It includes Sensate Focus Therapy, which engages couples in using relaxation techniques during non-pressured sensual stimulation. It has been called the art of touching and being touched. It emphasises on the role of non-genital tactile stimulation in sensuality and leads eventually to genital stimulation and finally sexual intercourse. Couples are taught how to relax and not pressurise themselves into expecting a lot from the tactile stimulation at first, but instead let emotions flow and take their own course [5]. Finding a position that is manageable keeping in mind the physical limitations of the couple, and avoiding too much exertion [5].

Addressing resistance by the couple at various steps throughout the treatment and helping them find a solution to their problems or alternative modalities of treatment.

Pharmacological Interventions

Hormone Replacement Therapy:

It works on the principle of replenishing the now-depleted stores of oestrogen in the body artificially. Studies show that dyspareunia responds maximally to HRT with a reaction in vaginal dryness and an increase in the blood flow and the number of cells in the vagina. There are a number of women who continue to have sexual dysfunction despite HRT and androgen therapy has proven to be more useful in them [10].

Androgen Therapy: Testosterone is responsible for both male and female libido and a reduction in testosterone during menopause leads to reduced sexual desire. Supplementing this hormone in the form of a transdermal patch has been used recently and has led to amelioration in the symptoms of sexual dysfunction, but it comes with its own set of unacceptable side effects such as deepening of voice and hirsute.

Putting the patient on a drug holiday: If the patient is on anti-depressant or an anti-psychotic drug and his symptoms of underlying psychiatric condition are under control, the clinician could consider stopping the implicating drug for some time (drug-holiday) under continuous monitoring of the patient and observe her for improvement of sexual dysfunction. Antidote is used in case of

sexual dysfunction secondary to use of anti depressants such as amantadine, cyproheptadine and buspirone [5].

CONCLUSION

Menopause marks the end of the reproductive phase of a woman's life and has significant implications on her sexual functioning as well. Sexual functioning in menopausal women had been an under-explored area until recently. Sexual functioning in menopausal women is affected by several biological, psychological and socio-cultural factors. Sexual dysfunction in this age group is secondary to a depletion of oestrogen and testosterone. Treatment modalities include Cognitive and Behavioural techniques such as the use of Sensate Focus Therapy. Pharmacological therapy options include the use of Oestrogen Replacement Therapy and Androgen Replacement Therapy.

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Female Dhat Syndrome : A Condition Beyond Just Vaginal Discharge

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ABSTRACT

'Dhat Syndrome' is one of the most important and well known culture bound syndromes among men, but the same semen loss anxiety can be attributed to vaginal discharge among women. This problem mainly presents with the symptoms of excessive vaginal discharge (often colourless and mucoid) with the complaints of chronic fatigue and loss of will to do work affecting the person psychologically, economically, physically leading to increased unnecessary burden on the health related expenses. These symptoms often are misdiagnosed as Sexually Transmitted Disease or Reproductive Tract Infection and lead to inappropriate treatment by the provider. Thus the symptoms of vaginal discharge, chronic fatigue, loss of will to work and vague pain symptoms should be carefully evaluated clinically and psychologically for the appropriate diagnosis and treatment.

KEYWORDS: Dhat Syndrome, Vaginal discharge, Culture bound syndrome, Women, Anxiety

INTRODUCTION

'Dhat Syndrome' essentially described as a culture bound syndrome, among males of adolescent to adulthood involving semen loss anxiety, but the entity however described in various case studies is quite common among females. In females it is associated with the personal perception of normal vaginal discharge perceived in an inappropriate manner. The features are commonly associated with complaints of weakness, loss of interest in daily household works, and associated anxiety. Dhat Syndrome in women is often called as Leukorrhoea.

MAGNITUDE OF THE PROBLEM

Incidence of female vaginal discharge is excessively common in the South East Asian region. They are often self-reported and are associated with RTI, but are not necessarily always like that. This brings forth complex cultural meanings of the problem. Studies also show that the previous ideas regarding the high burden of STI is found to be lesser in prevalence compared to the reported symptomatic complaints when correlated clinically with confirmatory investigations [1,2]. People who are unaware about the medical attributions characterize 'Dhat syndrome' among the females as exaggerated concern about passing (normal) vaginal discharge, and believe that their symptoms of fatigue and lethargy are due to the vaginal discharge. This finding was from a study where 200 women patients and 138 normal healthy women were systematically surveyed. It was also found that, 3.5 times more mis attribution was reported by women, and 16 of them were adamant that their symptoms were due to their vaginal discharges. These findings suggest that somatization is one of the most important problem that remains undetected in the case of non-pathological vaginal discharge among women [3].

HISTORICAL ASPECTS

The Vedic concept regarding the various bodily systems describe that the essence of the body is created by seven essential fluids;

The first among these is 'Rasa' or (Chyle) which is created from the food we eat. The wastes after utilizing the food products excreted as faeces. So according to Ayurveda 'Rasa' is the purified form of food. Then it is further utilized to make 'Rakta' i.e. blood, this blood is further utilized to make the 'Maans' i.e. (flesh) the Flesh in more purified form makes the 'Meda' i.e. Fat. Bone (asthi) is a better purified form of the 'Meda'. Then the 'Asthi' i.e. bone further specializes into Marrow (majja) at the end the most purified and essential component at the seventh stage turns into Semen i.e. (Veerya) which is believed to be the most precious fluid of the body [4].

This concept leads to the understanding that the Rasa or the food is the crudest and sperm or Veerya is the most purified form of the rasa and made at the end.

The Scriptures have also said that 100 Drops of blood is required to create a single drop of semen, which needs sackful of nutrients and food items. Which led to the common belief that the loss of few drops of this vital fluid means losing a lot of scarce and important energy of the body which in turn leads to weakness [5]. This in case of woman is depicted as vaginal discharge; vaginal discharge (DHAT) has also been said to be a major cause of weakness. Other studies also found that this belief among the

women is consistent [6,7].

After the further purification of the 'Veerya' the essence of 'Oja' or radiance is created at the eighth stage and the ninth one is the inner mind or 'Mana'. These concepts lead the women feel responsible for the thinking that vaginal discharge leads to a loss of radiance of the face among the people who suffer. Similar thought process is also found among the men with 'night emission' (spermatorrhea) or those indulging in excessive masturbation. The preservation of the semen is often a common point pressured in the Indian settings and is also related to 'radiance of the face' which leads to the emphasis on the conservation of semen [4].

The Traditional Birth Attendants in North India often make diagnosis of vaginal discharge just by looking at the lusterless faces of the women, a study reported [8]. Singh AJ in their study found that majority of the respondents in their study told that vaginal discharge led to pallor (pale faces). They also reported that women remarked that deficiency of blood was involved in the etiology of the vaginal discharge, since for the affected woman in the affected women, a blood product got lost i.e. vaginal secretions, which led to the discolored faces of such women and progressive weakness [9].

Gynaecologists have given many explanations regarding possible causes of the vaginal discharge among woman of south east Asia, namely, poor personal hygiene, lack of good nutrition, excess

physical exhaustion and anxiety in sexual activities [9]. Women who had less finding in the physical examination were treated with Ayurvedic medicines, multivitamins, ferrous sulfate, and were advised to have nutritious diet, proper rest and maintain personal hygiene. The gynaecologists would often speak to the woman's mother-in-law, and spouse to ensure that woman must be provided with a better nutrition and more rest. This validated the woman's distress and without a specific biomedical diagnosis the Ayurveda practitioners called this phenomenon as 'Dhat rog', and would say that it is because of excess humoral heat in the body.

The common treatment given by non psychiatric practitioners, was Ayurvedic remedies (Femiplex and Lukol were two commonly prescribed tablets) and dietary advice, advocating the avoidance of 'heaty' foods such as ghee, eggs or meat. Village traditional birth attendants (Dais) are also frequently consulted by women suffering from 'safed panni'. The village Dais stated that, women are concerned about 'safed panni' because from 100 drops of blood only one drop of 'safed panni' is formed [8]. Its loss is seen as a loss of a vital bodily fluid which is essential to health. The dais encouraged the families to have dietary modification, and prepare herbal remedies for women suffering from this condition. Village based healers who had shop-front clinics and practice a mixture of biomedical, Ayurvedic and folk treatments. They usually treat women who complain of vaginal discharge with Ayurvedic

medicines or antibiotics, and also occasionally administered infusion of intravenous glucose, as a treatment that has acquired powerful indigenous meanings as a cooling therapy [4,6].

WHILE CARING FOR A FEMALE DHAAT SYNDROME

South East Asia where, religions like Islam and Buddhism and Hinduism are common, the cultures are dominated with sexual morality. Just like in case of Orthodox Judaism, and other sects of Christianity, masturbation, abortion, homosexuality and premarital sexual relationship are considered as unacceptable. These religious beliefs are deep rooted in the culture which bring about the symptoms of guilt and anxiety in the sufferer regarding their sexual desires, being health professionals, nurses and their interventions must be targeted appropriately keeping in mind their cultural and religious beliefs. The interventions if done otherwise will bring about issues in trust and distress among the client. Sensitivity, compassion and respect for beliefs and values of the client different from own has to be kept in mind for the best quality interventions otherwise the problem might not be addressed at all.

Sexual Disorders and knowledge of Comorbidity.: there has been various studies to assess the sexual knowledge among the patients with Sexual disorders and it has been found in those studies that knowledge regarding the disorder is not been adequate. A retrospective study by Grover et,al. found poor knowledge regarding sexual matters

among patients suffering from 'Dhat syndrome' (low SKAQ-II scores) [9].

CO-MORBIDITIES IN FEMALES WITH DHAT SYNDROME

There have been various case reports from which we get an idea reading the varied nature of the symptoms of the syndrome and the diagnosis also does not fit a particular biomedical entity. Some researchers have emphasized that the patients are from depressive spectrum of disorders, some on the psychosomatic disorders group. The description of the condition has variation in each case [9,10]. There has been a study in which Dhat syndrome among females has been depicted as a disorder that is mainly under the depressive spectrum of disorders. In an RCT done in Goa found that 14% of the surveyed women complained of vaginal discharge and attributed stress as the main causal factor for it. High amount of comorbid mental illness was found among them and a high degree of somatoform disorders were found [9]. They also found that the distress was more in the poorly educated women and with increasing age i.e. <40 years, the symptoms were less perceived compared to the younger age group. A mixed method study (Qualitative and Quantitative) reported that women who had issues with their husbands in terms of domestic violence, substance abuse, coerced sexual activity and lack of control over the contraceptives had reported the symptoms of vaginal discharge 5 times more than the woman who did not have these psychosocial issues, and in majority

of the cases it was not linked with the RTI. The study also found the complaints of generalized weakness and decreased ability to perform house hold works [10].

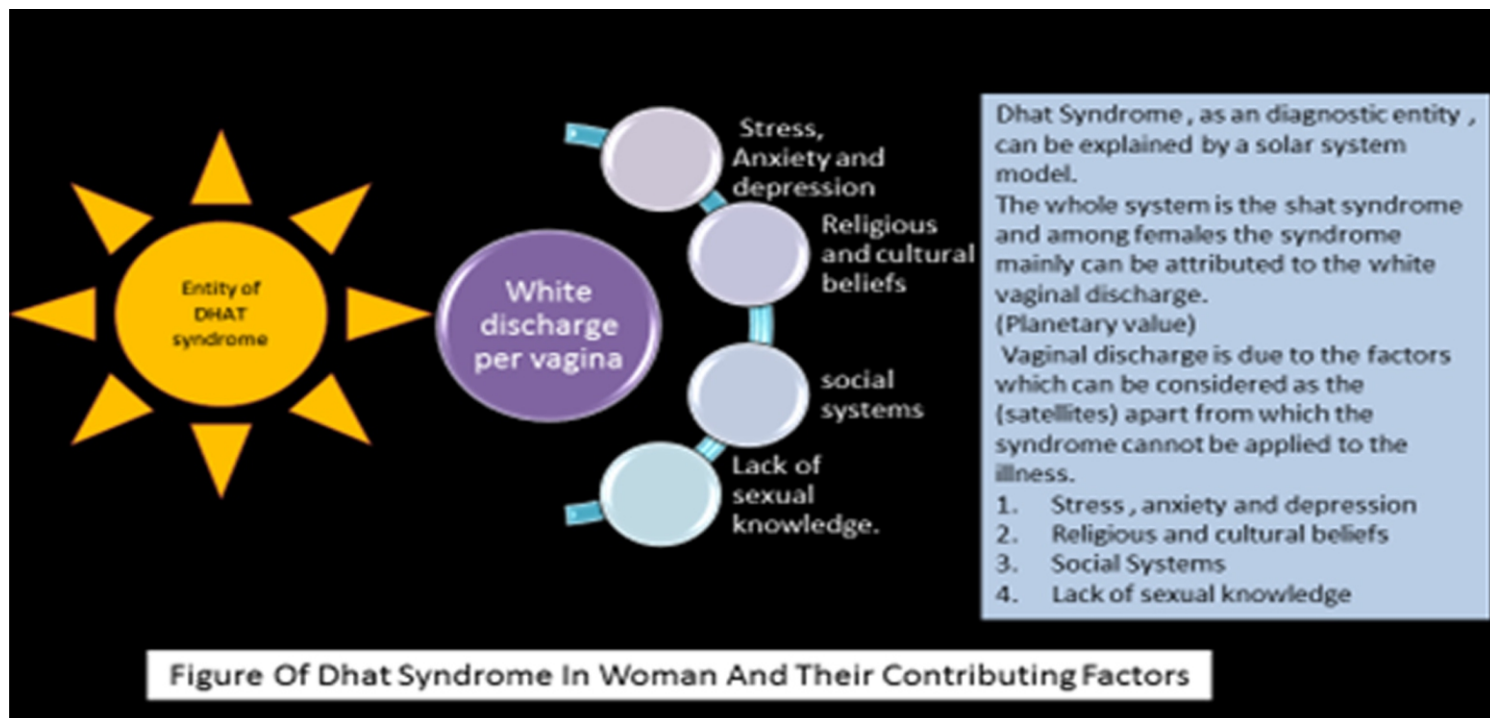
DIFFICULTY IN DIAGNOSING FEMALE DHAT SYNDROME

The presentation of the women in these cases is majorly attributed to the occurrence of vaginal discharge and most common associated complaints would be, generalized weakness (99%), 98% reported that back ache is associated with the secretion of Dhat. Studies also found that women perceive the sufferers of female Dhat syndrome having Lusterless faces as their precious body fluids are lost [10]. The symptomatic presentation of the disease varies in various parts of India but loss of

TREATMENT APPROACH

The literature says that the non-pathological vaginal discharge if considered as STI or RTI due to unavailability of the screening tests and their expensiveness will lead to resistance to common antibiotics and the stigmatization of the women , leading to further distress [17,18].

The traditional approach to the treatment in the Indian context is very varied [19,20]. The risk factors for the complaint of abnormal vaginal discharge may vary according to the cultural setting of the study. In the South Asian setting, there is a dearth of studies and researches are needed to be carried out so that appropriate evidence based algorithms can be prepared for women with complaints that are non-infectious in



etiology and they are offered psychosocial interventions appropriately. There is a need for alternative approaches for the management of common gynaecological issues and RTIs among women. The care should include the following points

- Psychosocial interventions that target factors such as beliefs about illness
- Depression and somatic preoccupations
- Accurate diagnostic tests for identification and specific treatment of RTIs

This will lead to the achievement the twin goals of RTI control and symptom alleviation. The highly specific identification and treatment of RTIs will lead to the RTI control and reduction in symptoms, along with effective targeting of psychosocial aetiologies may significantly alleviate the symptoms and further reduced economic burden on health

care and disability associated with the symptom [19]. When diagnostic tests are unavailable, it is recommended that all women with the complaints of vaginal discharge should be screened for psychosocial issues and so that personalized and appropriate care for such problems can be rendered along with the syndromic approach to the treatment of RTIs.

CONCLUSION

India and south East Asia is culturally a sexually conservative society, and predominantly a patriarchal constituency, where it is unacceptable for women to have sexual desires and express themselves sexually, which inturn leads to a deviated expression of stress which is communicated as the vague symptoms of tiredness and vaginal discharge namely 'Dhat Syndrome in females' [21,22].Lack of knowledge regarding the sexuality, the

restrains in the expression of sexual desires and strong hold of the religion makes it difficult for the women to accept their own desires. There is no suitable and acceptable way in the Indian culture for expression of the sexual desires, which leads to the chronic repression. Whereas vaginal discharge can commonly be attributed somatically and becomes a largely acceptable version among the lay communities making it socially and religiously acceptable showcase able symptom which explains the phenomenon of the problem [23,24]. Last but not the least Dhat Syndrome in females would require a comprehensive approach bio-medically as well as psychosocial and educational interventions to correctly address the whole syndrome.

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Clinical Approach to Sexual Dysfunction in Females

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ABSTRACT

Sexual functioning is a complex process and governed by various bio-psycho-social factors. Sexual dysfunction has high prevalence in females (43%) as compared to males (31%). A proper and comprehensive approach is needed for the assessment of a case of female sexual dysfunction. It includes thorough history taking, physical examination, laboratory investigations and thus formulation of diagnosis. A better approach to case of female sexual dysfunction helps clinicians for early diagnosis and management of such cases and improving overall quality of life of the patient.

KEYWORDS: Sexual dysfunction, Sexual behaviour, Sexual history, Genital examination

INTRODUCTION

Sexual functioning is a complex process, governed by various bio-psycho-social factors and interruption in any of these areas leads to sexual dysfunction. Nowadays, identification and management of sexual dysfunctions are in states of continuous transition because of evolving research in field of sexual dysfunctions.

The most recent edition of the Diagnostic and Statistical Manual (DSM 5), states that sexual dysfunctions “are a heterogeneous group of disorders that are typically characterized by a clinically significant disturbance in a person's ability to respond sexually or to experience sexual pleasure” [1]. As per DSM-5, female sexual dysfunction includes female sexual interest/arousal disorder, female orgasmic disorder, and genito-pelvic pain/penetration disorder. These sexual problems are only considered dysfunctions when they cause distress.

Sexual dysfunction has very high prevalence. It is found that about 43% of women as compared to 31% of men have one or other kind of sexual dysfunction [2]. In a study by Hayes et.al, hypoactive sexual desire is the most prevalent complaint among females 64% (range 16–75%) , followed by difficulty in arousal 31% (range 12–64%), difficulty in orgasm 35% (range 16–48%) and pain during sexual activity 26% (range 7–58%) [3]. In India few studies are available regarding prevalence of female dysfunction. A study done

in psychiatry OPD of a tertiary care teaching hospital in north India by Awasthi and his colleagues (2008) found 17% females reported one or more difficulties in sexual activity. These difficulties were in the form of headache after sexual activity (10%), orgasmic difficulties (9%), pain during intercourse (7%), lack of vaginal lubrication (5%), vaginal tightness (5%), bleeding after intercourse (3%) and vaginal infection (2%)[4]. Another study done in the tertiary care hospital's psychiatry OPD in south India by Singh and his colleagues (2009), reported female sexual dysfunction (FSD) in 73.2% women of the sample. The complaints elicited were difficulties with arousal in 91.3% , lubrication in 96.6%, orgasm in 86.6%, satisfaction in 81.2%, desire in 77.2%, and pain in 64.4% of the subjects [5].

CULTURE AND SEXUAL BEHAVIOUR

In broader sense, culture can be defined as unique behaviour, values and attitudes that are common to a group and shape their emotions, behaviours and life patterns; has strong influence on attitudes towards any sexual activity or behaviour [6]. One of the reasons for variation in pattern of sexual dysfunction might be difference in diagnostic threshold for normal and abnormal sexual practices, for example excessive masturbation is considered as an illness in some of the Asian countries but not in others[7].

Another example of how culture influences sexual function is - culture bound syndromes that is considered as a syndrome within a specific culture and presented with variety of somatic and psychiatric symptoms including sexual dysfunction, for example, female dhat syndrome in which females complains of passing whitish discharge (safed pani) per vaginum and associated with vague somatic manifestations in the form of burning hands and feet, dizziness, backache, and progressive weakness in the body. Females attribute these symptoms to loss of vital fluid from the body as described by their culture. On evaluation, these women had little evidence of infection and the quantity of discharge did not seem to be more than the normal physiological discharge [8,9]. By this way, culture helps to understand the way in which behaviour is perceived by the participants. Culture not only affects sexual behaviour but also reporting of sexual problems, their proper assessment and management.

CLASSIFICATION OF SEXUAL DYSFUNCTION

‘Female Sexual Dysfunction’ in DSM-5 include four categories: Female Orgasmic Disorder, Female Sexual Interest/Arousal Disorder (FSIAD, which encompasses what were previously termed Hypoactive Sexual Desire Disorder and Female Sexual Arousal Disorder in the DSM IV),

Genito-Pelvic Pain/Penetration Disorder(which encompasses what were previously termed vaginismus and dyspareunia), and Substance/Medication-Induced Sexual Dysfunction.

Female Sexual Interest Arousal Disorder

This category in DSM-5 is the combination of previous two categories i.e. hypoactive sexual desire disorder and female sexual arousal disorder.

Female Orgasmic Disorder

Female orgasmic disorder criteria as per DSM-5 include a marked delay in orgasm, infrequency or absence of orgasm, or less intense orgasm for at least six months. In this disorder orgasmic difficulties may be present since first sexual act (lifelong) or may start after a period of normal sexual function (acquired).

Genito-Pelvic Pain/Penetration Disorder

In DSM-5, vaginismus and dyspareunia are combined in genito-pelvic pain/penetration disorder. This disorder of sexual pain is defined as fear or anxiety, marked tightening or tensing of the abdominal and pelvic muscles, or actual pain with vaginal penetration that is persistent or recurrent for at least six months. This may be lifelong or acquired after a period of no dysfunction.

As per DSM-5,to diagnose any one of these disorders, the symptoms must be(a) present at least 6 months, (b) cause clinically significant distress in the individual [not solely in the individual's sexual partner(s)], and (c) not be better explained by another issue, such as relationship distress or other stressors [1].

Disorders according to sexual cycle	ICD-10	DSM-5
Sexual desire disorders	Lack or loss of sexual desire Sexual aversion Excessive sexual drive	Female sexual interest/arousal disorder
Arousal disorders	Failure of genital response	
Orgasmic disorders	Orgasmic dysfunction Lack of sexual enjoyment	Orgasmic disorder
Sexual pain disorders	Nonorganic dyspareunia Nonorganic Vaginismus	Genito-pelvic pain/penetration disorder Substance/Medication induced sexual dysfunction

Table No.1 Difference in classification of female sexual dysfunction in ICD - 10 and DSM - 5

ASSESSMENT OF A CASE OF FEMALE SEXUAL DYSFUNCTION

For any illness to be managed adequately clinician should know how to assess the particular illness. In general practice, clinician should know how to assess the cases of sexual dysfunction without developing barrier with the patient e.g. one should know how to use terms related to sexuality, not to disturb patient's privacy, cultural influences.

Aims of clinical assessment

1. To define what is the dysfunction?
2. To assess whether it is organic or non-organic?
3. What are the immediate causes?
4. What are the correct management options and prognosis?

Prerequisites for assessment of sexual dysfunction

Assessment for sexual dysfunction should be conducted in a comfortable surrounding maintaining adequate privacy so that patient feels free to speak about his/her problems. Interviewer should be empathic, non-judgemental and understanding. He should use neutral terms and simple language which can be understood by patient easily. Interviewer can take help of anatomical drawings for assessment. Adequate reassurance should be provided to the patient that sexual dysfunctions are common and treatable condition. Interviewer should not make assumptions about patients and their problems. One should take help of a female attendant or a relative while examining the patient of opposite gender.

The assessment of a case of female sexual dysfunction involves assessment of predisposing, precipitating, and maintaining (perpetuating) factors. To understand these factors status of couple's current sexual relationship and complete evaluation of both sexual partners is needed. A bio psychosocial approach is recommended and should include thorough history taking and physical examination of the patient [10].

History[11]

1. Demographic profile: Age, Sex, Occupation, Relationship status, Sexual orientation

2. Current functioning:

Onset: lifelong or acquired

Generalised: occurs in most situations or with most partners

Situational :

- a. Only with current partner
- b. In any committed relationship
- c. Only with masturbation
- d. In socially proscribed circumstance (e.g., affair)
- e. In definable circumstance

Frequency

Sexual compulsivity

3. Past sexual history

Childhood sexuality: Parental attitudes about sex, Learning about sex from parents, from books, magazines, or friends at school or through religious group, viewing sex play or intercourse of person other than parent, viewing sex between pets or other animals

Childhood sex activities: genital self stimulation before adolescence, sexual play or exploration with another child

Adolescence: age of onset of puberty, sense of self as feminine or masculine, sex activities like masturbation, homosexual activities, dating, experience of kissing, first coitus

Adult sexual activities: experience of premarital and marital sex

Special issues: history of rape, spousal abuse, chronic illness, history of sexually transmitted diseases, abortions, miscarriages, paraphilias etc.

4. Bio-psycho-social history

The psychosocial history deals with evaluation of interplay of various biological, psychological and socio cultural factors and their effect on sexual functioning [12]. When the patient is in a current sexual relationship, both the partners need to be evaluated [13]. A biopsychosocial approach is helpful in these. Biological factors may include medical/anatomical problems that affect genital sexual response or hormonal changes that affects libido. Socio-cultural factors to consider, include the woman's attitudes about menopause and aging, as well as religious, cultural, and other social values regarding sex. Psychological factors need to be assessed in details in the patients in terms of predisposing, precipitating and maintaining factors.

5. Medical history: Historical events related to the presence of chronic disease,

use of pharmacological agents, endocrine disorders, prior surgeries and trauma is to be carefully evaluated. While evaluating women careful medical history is to be obtained about any health problem that might affect sexual anatomy, the vascular system, the neurological system, and the endocrine system. Indirect causes i.e., factors that cause chronic pain, fatigue, and malaise may also contribute to dyspareunia.

It also includes screening for depression regardless of antidepressant use as depression is most of the time related to sexual dysfunction, particularly of low sexual desire.

6. Substance use history: Evaluation of alcohol or other recreational drug use by the partners needs to be evaluated as they may also cause sexual dysfunction either by hormonal imbalance (by causing reduction in production of testosterone or by increased secretion of prolactin) or by direct effects on the penile neurovascular system.

7. Treatment/Medication history: Clinicians should also enquire about the medication intake, including prescription drugs, over the counter medications that would be associated with sexual dysfunction. While taking history, attention must be given to features which can help in distinguishing predominantly organic sexual dysfunction.

Physical Examination

Indication for physical examination are

- Recent onset of loss of desire without any apparent cause

- Female with sexual problems either during peri or post-menopause
- History of any physical illness in recent past, presence of physical symptoms other than sexual dysfunction
- History of marked menstrual irregularity and infertility
- History of abnormal puberty or endocrine disorder

Predisposing factors	<ul style="list-style-type: none"> • Restrictive upbringing • Disturbed family relationships • Traumatic early sexual experience • Inadequate sexual information
Precipitating factors	<ul style="list-style-type: none"> • Unreasonable expectations • Random failure • Discord in the relationship • Dysfunction in the partner • Infidelity • Reaction to organic disease • Pregnancy/Childbirth • Poor emotional intimacy • Expectation of negative outcome
Maintaining (perpetuating) factors	<ul style="list-style-type: none"> • Performance anxiety • Guilt • Poor communication • Loss of attraction between partners • Impaired self-image • Restricted foreplay • Poor emotional intimacy • Depression or anxiety • Expectation of negative outcome • Fear of intimacy • Sexual myths and misconceptions

Table No.2. Psychological factors

FEATURES	PREDOMINATELY ORGANIC	PREDOMINATELY PSYCHOGENIC
Age	Older	Younger
Onset	Gradual	Acute
Course	Progressive	Intermittent
Circumstances	Global	Situational
Partner problem	Usually secondary	Usually at onset
Organic risks	Present	Variable
Desire	Normal to start with	Decreased

Table No.4. Psychogenic & organic features

COMPONENTS	DETAILS OF HISTORY TAKING
LIBIDO/INTEREST	<ul style="list-style-type: none"> • Do you look forward to sex? • Do you enjoy sexual activity? • Do you fantasize about sex? • Do you have sexual dreams? • How easily are you sexually aroused (turned on)? • How strong is your sex drive?
ORGASM/SATISFACTION	<ul style="list-style-type: none"> • Is there adequate and acceptable stimulation with partner and/or with masturbation? • Does your vagina become sufficiently moist? • Are orgasms absent and/or very delayed and/or markedly reduced in intensity? • Is the degree of trust and safety, you feel you need, present? • What do you fear may happen that could be
DYSPAREUNIA / VAGINISMUS	<ul style="list-style-type: none"> • Where does it hurt? • How would you describe the pain? • When does the pain occur (with penile contact, once the penis is partially in, with full entry, after some thrusting, after deep thrusting, with the partner's ejaculation, after withdrawal, with subsequent micturition?) • Does your body become tense when your partner is attempting, or you are attempting to insert his penis? • What are your thoughts and feelings at this time? • How long does the pain last? • Does touching cause pain? • Does it hurt when you wear tight clothes? • Do other forms of penetration hurt (tampons, fingers)? • Do you recognize the feeling of pelvic floor muscle tension during sexual contact? • Do you recognize the feeling of pelvic floor muscle tension in other (non-sexual) situations? • Do you feel subjectively excited when you attempt intercourse? • Does your vagina become sufficiently moist? • Do you recognize the feeling of drying-up?

Table No.3. History taking relevant to specific sexual dysfunction [14].

To identify any disease complete physical examination is needed. Examination of entire body and genitalia should be done. A thorough inspection and palpation of external genitalia should be done including skin colour, thickness, texture, turgor and amount and distribution of pubic hair. During genital examination internal mucosa, muscle tone, any episiotomy scar or strictures, discharge in the vaginal vault should be looked for. Cultures should be taken if indicated.

Psychological Assessment

The assessment includes evaluation of psychological state of the patient at present with emphasis to any symptoms of depression or anxiety, impaired coping skills, history of any sexual abuse, any social or occupational stress, and economic state. All these factors have impact on patient's sexual status, so they need to be assessed in each case. Another important aspect in the assessment is the status of past and present sexual relationships. Studies shown that sexual dysfunction is associated with conflicts in interpersonal relationships [15,16].

Laboratory investigations

Basic laboratory testing is helpful to rule out treatable conditions, and includes complete blood count, lipid profiles, renal and liver function, blood glucose and thyroid function tests. follicle-stimulating hormone, luteinising hormone, oestrogens and testosterone should be

measured to assess the functional integrity of the hypothalamic-pituitary-gonadal axis. When an infective etiology for dyspareunia is suspected, vaginal, cervical, and vulval discharge microscopy/ cultures should be performed. Other investigations, including imaging, will be guided by symptoms, particularly in cases of sexual pain.

FORMULATION OF FEMALE SEXUAL DYSFUNCTIONS

A formulation of the diagnoses is recommended. The formulation integrates all information obtained from the history received from the patient with and without a partner, and any relevant physical examinations, blood assays and self-report questionnaires. On the basis of the formulation, a diagnosis is established, preferably using DSM-5 diagnostic system. The clinician also continues to modify the formulation as information emerges during treatment.

CONCLUSION

Sexual dysfunction is highly prevalent among females and associated with poor quality of life. A proper and comprehensive approach to a case of female sexual dysfunction is helpful in understanding female sexual problems in a better way. By addressing all aspects of women's sexual function, healthcare providers can better diagnose and manage such cases.

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Types of Sexual Dysfunction in Females : Current Nosological Status and Beyond

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ABSTRACT

Female sexual dysfunctions (FSD) are a heterogeneous group of disorders which are highly prevalent but less well understood and defined. FSD have been less well studied in contrast to the male sexual dysfunctions. The nosological classification varies with different classification systems. There are changes in the classification systems pertaining to FSD which may be a positive move but still these are amenable for further modifications to cater to the large population having the problem. Even the assessment instruments have been undergoing changes for better understanding of this varied group of disorders. Thus there is a growing need to come up with more suitable nosological and diagnostic classification from the currently used systems.

KEY WORDS : Sexual response cycle, DSM, ICD, Female sexual dysfunction

INTRODUCTION

Sexual dysfunctions are a heterogeneous group of disorders which includes “the various ways in which an individual is unable to participate in a sexual relationship as he or she would wish” [1]. Sexual functioning is interplay of many factors including biological, psychological and sociocultural factors. A diagnosis of sexual dysfunction is made after ruling out dysfunction due to nonsexual mental disorders, influence of any substance, due to medical condition or due to stressors like intimate partner violence, interpersonal relational problems or other such stressors.

EPIDEMIOLOGY

According to the data from National Health and Social Life Survey nearly a third of women have decreased sexual interest and a fourth have difficulty in experiencing orgasm [2]. A survey conducted in general population in USA, reveals sexual dysfunction more common in women than men [3]. In a study conducted in England nearly two-fifth of women had current sexual problem with lack of sexual desire, infrequent desire, and vaginal dryness being the most common [4]. A study involving 6700 participants in 9 Asian countries revealed 30% of women reported sexual problems [5]. In a study conducted in South India, two third women had female sexual dysfunction (FSD) with most common dysfunctions being difficulties in arousal, lubrication and orgasm [6]. Another Indian study found FSD in more than half the number of fertile females attending a tertiary care center [7].

SEXUAL RESPONSE CYCLE

The sexual response cycle in both sexes is often divided into five stages: desire, excitement, plateau, orgasm, and resolution [8].

Different patterns of orgasm in females as depicted in figure 1 [9].

Pattern 1 shows multiple orgasms.

Pattern 2 shows arousal that reaches the plateau level without going onto orgasm (resolution occurs very slowly).

Pattern 3 shows several brief drops in the excitement phase followed by an even more rapid resolution phase. .

Sexual response cycle	Physiological changes
1.Desire phase (consists of the motivational or appetitive aspects of sexual response. Includes sexual urges, fantasies, and wishes)	Has no specific physical changes
2.Exitement (refers to subjective feeling of sexual pleasure and accompanying physiological changes)	Vaginal lubrication begins Inner two-thirds of the vagina expands Color of vaginal wall becomes darker Outer lips of vagina flatten and move back from the vaginal opening Inner lips of the vagina thicken Clitoris enlarges Cervix and uterus move upward Nipples become erect Breast size increases modestly Sex flush appears (late and variable) Heart rate and blood pressure increase General neuromuscular tension increases

<p>3. Plateau (refers to heightened state of excitement attained with continued stimulation)</p>	<p>Vaginal lubrication continues, but may wax and wane Orgasmic platform forms at outer third of the vagina Cervix and uterus elevate further Inner two-thirds of vagina lengthens and expands further Clitoris retracts beneath the clitoral hood Lips of the vagina become more swollen and change color Sex flush intensifies and spreads more widely Further increase in breast size; areola enlarges Heart rate and blood pressure increase further Breathing may become more shallow and rapid Voluntary contraction of rectal sphincter used by some females as a stimulative technique Further increase in neuromuscular tension Visual and auditory acuity are diminished</p>
<p>4. Orgasm (defined as the peak of sexual pleasure, with rhythmic contractions of the genital musculature)</p>	<p>Onset of powerful involuntary rhythmic contractions of orgasmic platform and uterus Sex flush, if present, reaches maximum color and spread Involuntary contractions of rectal sphincter Peak heart rates, blood pressure, and respiratory rates General loss of voluntary muscular control; may be cramp like spasms of muscle groups in the face, hands, and feet</p>
<p>5. Resolution (it refers to a general sense of relaxation and well-being is experienced. Then, there is a refractory period in males, which is usually absent in females)</p>	<p>Clitoris returns to normal position within 5-10 s after orgasm Orgasmic platform disappears Vaginal lips return to normal thickness, position, and color Vagina returns to resting size quickly; return to resting color may take as long as 10-15 min Uterus and cervix descend to their unstimulated positions Areola returns to normal size quickly; nipple erection disappears more slowly Rapid disappearance of sex flush Irregular neuromuscular tension may continue, as shown by involuntary twitches or contractions of isolated muscle groups Heart rate, respiratory rate, and blood pressure return to baseline (pre-excitation) levels General sense of relaxation is usually prominent Visual and auditory acuity return to usual levels</p>

Table No. 1: Physical changes in the female during the sexual response cycle [9].

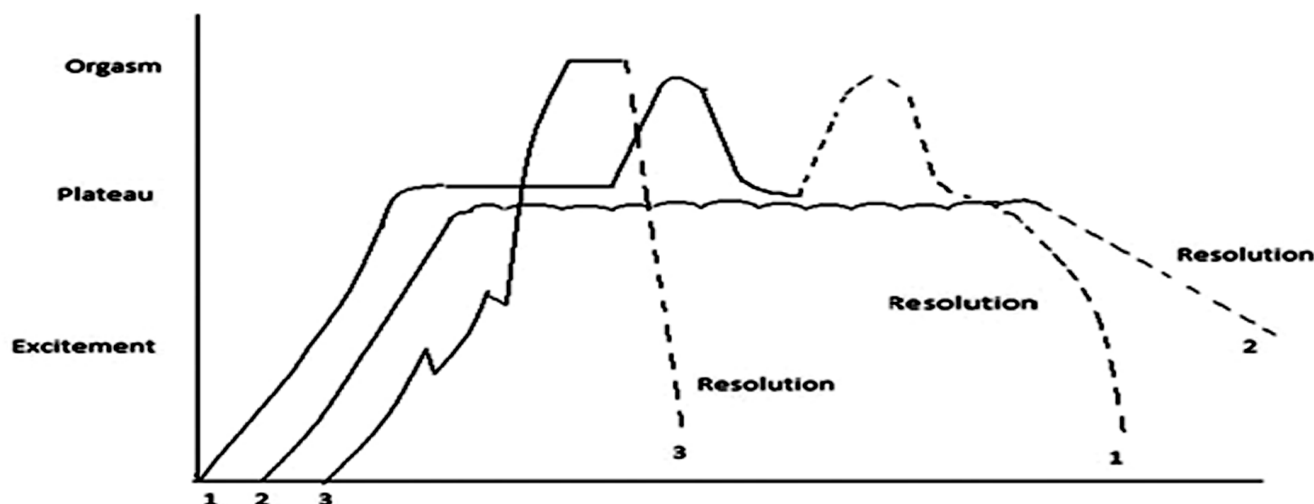


Figure No. 1 : Female sexual response cycle

DSM and ICD

The Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria for female sexual dysfunction have been continuously evolving [10]. The changes in the criteria reflect the constant changes in the understanding of female sexual dysfunction and the current thinking of the psychiatrist at the time of the publication. For instance, the diagnostic criteria of female sexual interest in the DSM IV TR were based on the model of human sexual response [9, 11]. However, newer research puts question on the different phases of arousal as well the linear model doesn't explain the sexual behavior completely especially in females [12].

In DSM-5, changes were made for better understanding of the diagnosis. For instance, female disorders of desire and arousal were combined into a single diagnosis namely female sexual interest/arousal disorder. Even some of the diagnostic criteria were changed to increase precision. For example, nearly all diagnosis of sexual dysfunction in DSM-5

requires at least 6 months duration and frequency of 75%-100% [13]. A new exclusion criterion is added in DSM-5 which is "the disorder should not be better explained by a nonsexual mental disorder, a consequence of severe relationship distress (e.g., partner violence) or other significant stressors" [14].

A new severity scale is also added in which the disorder may be divided into mild, moderate or severe.

A new group called 'associated features' is added which is subdivided into five categories. These categories are described in DSM-5 as follow [14].

- 1) Partner factors (e.g., partner sexual problem; partner health status)
- 2) Relationship factors (e.g., poor communication, discrepancies in desire for sexual activity)
- 3) Individual vulnerability factors (e.g., poor body image; history of sexual or emotional abuse), psychiatric comorbidity (e.g., depression; anxiety), or stressors (e.g., job loss; bereavement)
- 4) Cultural or religious factors (e.g.,

inhibitions related to prohibitions against sexual activity or pleasure; attitudes toward sexuality)

5) Medical factors relevant to prognosis, course, or treatment

Merger of sexual disorders of desire and arousal in females in DSM-5 is based on observations that the division may be artificial [13]. Moreover, there is an increasing dismissal of the linear model of sexual arousal [15], also it is seen that disorders of desire and arousal occur concurrently in high frequency in both men and women. Thus the merger of the two may be the right step forward [16]. Another important change is the union of the diagnoses of dyspareunia and vaginismus into a single entity 'genito pelvic pain/penetration disorder'. This is based on the observation that it is extremely difficult to reliably differentiate the two disorders [17]. Deletion of sexual aversion disorder is due to the similarities it shares with phobias and other anxiety disorders [18]. The current ICD-10 classifies sexual dysfunctions under 'behavioural syndromes associated with physiological disturbances and physical factors'[1]. It also includes psychological and organic based sexual dysfunction diagnoses. The DSM-5 does not address the excessive sexual drive (nymphomania) listed in the ICD -10 or compulsive sexual behavior disorder (mentioned as a possibility in the ICD-11). DSM-5 continues to avoid the discussion of organic vs. non-organic.

ICD-11:The World Health Organization (WHO) is preparing the 11th version. Information about the classification of sexual dysfunctions in the ICD-11 is not much available. The available beta draft of the ICD-11 specifies a new category '05 - Conditions Related to Sexual Health' focusing on human sexuality [20, 21].

VARIOUS FEMALE SEXUAL DISORDERS

1. Female sexual interest/arousal disorder Lack of, or significantly reduced, sexual interest/arousal, as manifested by (the criteria below as described in DSM-5)

- Absent/reduced interest in sexual activity.
- Absent/reduced sexual/erotic thoughts or fantasies.
- No/reduced initiation of sexual activity, and typically unreceptive to a partner's attempts to initiate.
- Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all sexual encounters.
- Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues.
- Absent/reduced genital or non-genital sensations during sexual activity in almost all or all sexual encounters

2. Female orgasmic disorder

Presence of either of the following symptoms and experienced on almost all or all occasions of sexual activity:

- Marked delay in, marked infrequency of,

DSM-I 1952 (19)	DSM-II 1968 (19)	DSM-III 1980 (19)	DSM-III TR 1987 (19)
<p>Disorders of psychogenic origin or without clearly defined physical cause or structural change in the brain</p> <ul style="list-style-type: none"> • Psychophysiological autonomic and visceral disorders • Psychophysiological genito-urinary reaction e.g. 'some types of menstrual disturbance, dysuria and so forth, in which emotional factors play a causative role' 	<p>Psychophysiological disorders</p> <ul style="list-style-type: none"> • Psychophysiological disorders (physical disorders of presumably psychogenic origin) • Psychophysiological disorders (physical disorders of presumably psychogenic origin)] • Psychophysiological genito-urinary disorders'- such as disturbances in menstruation and micturition, • dyspareunia, and impotence in which • emotional factors play a causative role' 	<p>Psychosexual Dysfunctions</p> <ul style="list-style-type: none"> • Inhibited sexual desire • Inhibited sexual excitement • Inhibited female orgasm • Inhibited male orgasm • Exhibitionism • Premature ejaculation • Functional dyspareunia • Functional vaginismus • Atypical psychosexual dysfunction 	<p>Sexual Dysfunctions</p> <ul style="list-style-type: none"> • Hypoactive sexual desire disorder • Sexual aversion disorder • Female sexual arousal disorder • Male erectile disorder Inhibited female orgasm • Inhibited male orgasm Premature ejaculation • Dyspareunia • Vaginismus • Sexual dysfunction not otherwise specified

or absence of orgasm.

- Markedly reduced intensity of orgasmic sensations.

3. Genito-pelvic pain/penetration disorder

Persistent or recurrent difficulties with one (or more) of the following (the criteria below as described in DSM-5)

- Vaginal penetration during intercourse.
- Marked vulvo-vaginal or pelvic pain during vaginal intercourse or penetration attempts.
- Marked fear or anxiety about vulvovaginal or pelvic pain in anticipation of, during, or as a result of vaginal penetration.
- Marked tensing or tightening of the pelvic floor muscles during attempted vaginal penetration.

4. Excessive sexual drive

Both men and women may occasionally complain of excessive sexual drive as a problem in its own right, usually during late teenage or early adulthood.

5. Substance/medication-induced sexual dysfunction

Evidence from the history, physical examination, or laboratory findings of both of the following:

- Clinically significant disturbance in sexual function developed during or soon after substance intoxication or withdrawal or after exposure to a medication.
- The involved substance/medication is capable of producing clinically significant disturbance in sexual function.

According to American College of Obstetricians and Gynecologists ACOG, there are four main categories of Female Sexual Disorder. These are

1. Sexual desire disorder
Hypoactive sexual desire disorder
Sexual aversion disorder
2. Sexual arousal disorder-Arousal disorder
3. Orgasmic disorder (persistent or recurrent delay in absence of orgasm)
Primary orgasmic disorder
Secondary orgasmic disorder
4. Pain disorder- Dyspareunia

CRITIQUE IN NOSOLOGICAL CLASSIFICATION OF FEMALE SEXUAL DYSFUNCTION

The American Psychiatric Association has played important role in the current classification of FSD in its Diagnostic and Statistical Manual of Mental Disorders (especially from DSM-III to DSM-5). But its limitations in FSD have been recognized by many as it misses the distinctions that characterize the presentation of FSD. This may be due to the fact that it arises from a system which is invented to characterize psychiatric

DSM-IV-TR Diagnoses (19)	Changes in DSM-5 (14)	ICD-10 (1)
<ul style="list-style-type: none"> • Female hypoactive desire disorder • Female arousal disorder 	<ul style="list-style-type: none"> • Female sexual interest/arousal disorder 	<ul style="list-style-type: none"> • F52.2 Failure of genital response • F52.0 Lack or loss of sexual desire
<ul style="list-style-type: none"> • Female orgasmic disorder 	<ul style="list-style-type: none"> • Female orgasmic disorder 	<ul style="list-style-type: none"> • F52.3 Orgasmic dysfunction
<ul style="list-style-type: none"> • Dyspareunia • Vaginismus 	<ul style="list-style-type: none"> • Genito-pelvic pain/penetration disorder 	<ul style="list-style-type: none"> • F52.6 Nonorganic dyspareunia • F52.5 Nonorganic vaginismus
<ul style="list-style-type: none"> • Substance/medication-induced sexual dysfunction 	<ul style="list-style-type: none"> • Substance/medication-induced sexual dysfunction 	
<ul style="list-style-type: none"> • Sexual dysfunction NOS 	<ul style="list-style-type: none"> • Other specified sexual dysfunctions and Unspecified sexual dysfunction 	<ul style="list-style-type: none"> • F52.8 Other sexual dysfunction, not caused by organic disorders or disease • F52.9 Unspecified sexual dysfunction, not caused by organic disorder or disease
<ul style="list-style-type: none"> • Sexual aversion disorder 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • F52.1 Sexual aversion and lack of sexual enjoyment • 10 Sexual aversion • 11 Lack of sexual Enjoyment
<ul style="list-style-type: none"> • Sexual dysfunction due to a general medical condition 		
		<ul style="list-style-type: none"> • F52.7 Excessive sexual drive

disorders [22]. Moreover, there is criticism of some of the changes in DSM-5, including the merging of disorders of desire and arousal as large number of low desire and arousal patients are being excluded due to this change [23].

In ideal situation, any nosological classification should be based on the basis of etiology, pathogenesis, and clinical phenomenology of the disorder. But this is rare in the current classificatory systems for FSD primarily because the diagnosis is based on history and clinical presentation of the patient. Also there is less importance given to the fact that one may have 2 or more FSD simultaneously which necessitates specifying primary and secondary status to the diagnosis.

The current classificatory systems are based either on the categorical or dimensional approaches, and both inherently possess certain features which cause hindrance especially for FSD. The categorical model considers each group as a discrete entity with clear boundaries between them, while the dimensional model is cumbersome which possess difficulties in using it in day to day clinical settings. There is a need to develop a system which shares characteristic of both categorical and dimensional models [24]. A third approach to nosology is the prototype matching which is a more natural way to classify complex presentations and an amalgamation of the two previous models [25].

There is a need to build a nomenclature for

FSD that is truly valid, and accurately addresses the nature of reality.

ASSESSMENT OF FSD

Various tools have been developed to assess FSD, some of which includes:

1. The Golombok Rust Inventory of Sexual Satisfaction (GRISS; 1987), is a 28-item questionnaire which includes five domains specific to women (anorgasmia, vaginismus, female avoidance, female non sensuality, and female dissatisfaction) [26].

2. The Brief Index of Sexual Functioning for Women (BISF-W; 1994), is a 22-item questionnaire; provides composite scores and domain scores for thoughts/ desires, arousal, frequency of sexual activity, receptivity/initiation, pleasure/orgasm, relationship satisfaction, and problems affecting sexual function [27].

3. The Female Sexual Function Index (FSFI; 2000), is a 19-item questionnaire comprises six domains (desire, subjective arousal, lubrication, orgasm, satisfaction, and pain). It is cross-validated in women with mixed sexual dysfunctions, and cutoff scores have been developed to define dysfunction and non-dysfunction [28].

4. The Menopausal Sexual Interest Questionnaire (MSIQ; 2004), is a 10-item instrument that assesses three domains of sexual function (desire, responsiveness, and satisfaction). It is specifically developed for use in menopausal women [29].

5. The Profile of Female Sexual Function (PFSF; 2004), is a 37-item self-administered questionnaire (SAQ) that comprises seven domains: sexual desire, arousal, orgasm, sexual pleasure, sexual concerns, sexual responsiveness, and sexual self-image. The instrument was developed to assess sexual function and response to treatment in menopausal women is now validated for naturally menopausal women [30].

6. The Female Sexual Distress Scale (FSDS; 2002), is a 12-item assessment that provides a total distress score; a cutoff score of ≥ 15 is suggestive of personal distress [31].

7. The Structured Diagnostic Method (SDM; 2005), consists of four SAQs followed by a structured face-to-face interview. The first SAQ is the Life Satisfaction Checklist, with nine items that assess overall quality of life, including a question specific to sexual function; the next component is a subset of questions regarding sexual function from the Medical History Questionnaire; while the third and fourth components are the above-mentioned SFQ and FSDS [32].

CONCLUSION

Female sexual dysfunction (FSD) is a highly prevalent condition across the globe. There is a strong need to develop better classification system to cater to the need for better understanding of FSD. One way could be developing a system blended

with characteristics of both categorical model and the dimensional model.

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Assessment of Female Sexual Dysfunction

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ABSTRACT

Female sexual dysfunction is a growing problem in our country which is coming into recognition due to ongoing research in the field of sexual dysfunction. Along with development in other areas of sexual dysfunction, researchers are also trying to develop new assessment tools for the same. Earlier developed scales were mainly screening tools but later on scales for diagnosis and measuring treatment response were developed. In order to assess patient adequately and manage them, use of validated instruments having good reliability and validity is essential. Most of the scales are self-rated, brief and sensitive to treatment change. But still more research is needed to validate these instruments in repeated settings.

KEYWORDS: Female sexual dysfunction, PLISSIT model, ALLOW model, Assessment of FSD

INTRODUCTION

Female sexual dysfunction (FSD) is a common clinical condition, with multiple etiologies including biological, psychological and social factors contributing to the illness [1]. Biological factor includes structural abnormalities, endocrine disturbances and defect in nervous system; psychological factor includes interpersonal conflict, past experiences and psychiatric illnesses while social factor includes lack of privacy and societal stigmas [2]. Therefore, management of FSD should imply a multimodal approach which focuses on the biological, psychological and the environmental factors relevant to that particular individual. Such an approach helps improve the effectiveness of the intervention, enhances acceptability, and ensures active participation of patient in the management plan [3]. The World Health Organization defines FSD as "the various ways in which a woman is unable to participate in a sexual relationship as she would wish" [3]. A clinically useful definition of FSD is "the persistent/recurring decrease in sexual desire or arousal, the

ASSESSMENT MODELS

For appropriate management of FSD a detailed and systematic approach to assessment of FSD is required. This involves a detailed history, a comprehensive general physical examination, detailed local examination, and appropriate investigation relevant to individual patient [3]. History should be taken in a comfortable and relaxed environment which offers privacy to the patient and her partner. ALLIANCE guidelines list the '5 Es' of effective sexual history taking i.e. experience, etiquette, empathy, ethnic (cultural) understanding, and external environment conducive for relaxation [2]. History taking

should include less threatening and remote aspects of sexuality are explored more before moving on to current or threatening issues. The PLISSIT model is used to initiate discussions about sexual dysfunction and its management [5]. The ALLOW model facilitates completion of the sexual history and initiation of treatment or further evaluation [5].

The PLISSIT model [5]

Permission - Obtain permission from the patient to discuss sexuality (e.g., ask all patients about their sexuality).

Limited Information- Give limited information (e.g., inform the patients about normal sexual functioning)

Specific Suggestions- Patients are given suggestions about their particular complaints (e.g., advising patients to practice self-massage).

Intensive Therapy- Consider intensive therapy with a sexual health specialist.

The ALLOW model [5]

Ask- Ask the patient about sexual function and activity.

Legitimize- Validate problems and acknowledge at the same time.

Limitations- Identifying limitations to the assessment of sexual dysfunction.

Open up- Open up the discussion, including potential referral.

Work together- Work with the patient to develop goals and a management plan.

RELEVANCE OF RATING SCALES IN ASSESSMENT OF SEXUAL DYSFUNCTION IN FEMALES

Although the diagnosis of FSD currently relies on non-standardized clinical

interview, a number of assessment instruments have been developed recently that permit the evaluation of multiple dimensions of sexual function and sexual satisfaction, as well as changes in those dimensions over time [6]. Questionnaires are useful to assess sexual function like the International Index of Erectile Function questionnaire for male sexual dysfunction, but there are no such instruments for female sexual dysfunction. A major reason for the lack of a standardized instrument is the continuously changing of the definition of female sexual dysfunction. Earlier developed self-assessment instruments used to be one-dimensional and, therefore, are not adequate for the current understanding of female sexual dysfunction. Nowadays, multi-dimensional instruments have ability to assess each and every aspect of sexual dysfunction. Currently available self-report questionnaires were developed mainly for the purpose of epidemiologic tools or to determine the changes due to pharmacologic treatment. These self-report questionnaires are not diagnostic instruments yet they can complement the overall evaluation of the patient with sexual dysfunction [7].

Assessment tools can be classified in many different ways. It can be screening tool or diagnostic; self-rated or clinician rated. To be of good quality, an assessment tool should have good reliability and validity. Reliability refers to the replicability or consistency of measurement. Validity addresses the

essence of what is being measured; it reflects the degree to which an instrument measures what it meant to measure.

ASSESSMENT TOOLS

Various screening and diagnostic tools have been validated for FSD which includes Golombok Rust Inventory of Sexual Satisfaction, Derogatis sexual function inventory, Derogatis interview for sexual function, Female sexual function index, Sexual function questionnaire, Brief sexual function index for women, Female change in sexual function questionnaire, Female sexual distress scale, FSFI[6].

The Golombok Rust Inventory of Sexual Satisfaction (GRISS; 1987)

This questionnaire is used for knowing the presence and level of sexual problems. It consists of 28 items. It provides overall scores of the quality of sexual functioning within a relationship. The two-separate male and female scales are shown to have high reliability and validity. It has 12 subscales which includes premature ejaculation, anorgasmia, impotence, vaginismus, non-communication, infrequency, male and female avoidance, male and female non-sensuality, and male and female dissatisfaction are shown to have good reliability and validity[8].

The Brief Index of Sexual Functioning for Women (BISF-W; 1994)

It consists of 22 items. Scoring technique provides composite as well as domain

scores for thoughts/desires, relationship satisfaction, arousal, frequency of sexual activity, receptivity/initiation, pleasure/orgasm, and problems affecting sexual function. Most items are arranged in Likert-type format to rate the frequency of occurrence of sexual desire, arousal or satisfaction associated with common sexual behaviors [9,10].

The Sexual Desire Inventory (SDI; 1996)

It is a brief scale consisting of 14 items meant to measure the multidimensional construct of sexual desire in a dyadic context. Four items are scored on an 8-item response scale from 0 (not at all) to 7 (more than once a day) concerning frequency of desire. The remaining items were answered on a 9-point Likert scale ranging from 0 (no desire) to 8 (strong desire). Possible score ranges from 0 to 112. It measures sexual desire quantitatively in cognitive terms [10].

The Derogatis Interview for Sexual Functioning (DISF/DISF-SR; 1997)

The Derogatis Interview for Sexual Functioning (DISF/DISF-SR) is a semi-structured interview comprised of 25 items and reflects quality of sexual functioning in a multi-domain format. The DISF-SR is a matching self-report inventory. It includes questionnaire suitable for both men and women. There are three distinct levels i.e. discrete items, functional domains and aggregate summary (total) score in which DISF series are designated to be interpreted.

DISF includes five primary domains of sexual functioning: sexual cognition/fantasy, sexual arousal, sexual behavior/experience, orgasm and sexual drive/relationship. Apart from this, an aggregate DISF total score is calculated to summarize quality of sexual functioning across the five primary DISF domains. Approximately 12–15 minutes are required for administration of both DISF and DISF-SR. Inter-rater reliability estimates for the DISF interview were also very good. The DISF/DISF-SR has demonstrated good inter-rater reliabilities, discriminative validity and sensitivity [11].

The Female Sexual Function Index (FSFI; 2000)

The Female Sexual Functioning Index (FSFI) is a 19 item self-report inventory designed to measure the quality of female sexual functioning. The FSFI comprises six domains i.e. desire, subjective arousal, lubrication, orgasm, satisfaction and pain). The FSFI was initially validated on a clinically diagnosed sample of women with female sexual arousal disorder (FSAD). Subsequently, the validation statement was extended to include women with a primary clinical diagnosis of Inhibited Female Orgasm Disorder or HSDD. It has good internal consistency, reliability, coefficients and discriminant validity (that is, patients versus controls) [12,13].

The Menopausal Sexual Interest Questionnaire (MSIQ; 2004)

It is a 10-item scale that assesses three domains of sexual function i.e. desire, responsiveness, and satisfaction and is specifically designed for use in menopausal women. The Menopausal Sexual Interest Questionnaire (MSIQ) had high reliability, construct validity, sensitivity, and specificity [14].

The Sexual Function Questionnaire (SFQ)

It was developed in 2002 to assess multiple dimensions of female sexual function and sexual satisfaction. SFQ has 34-item and eight domains which includes desire, physical arousal/sensation, physical arousal/ lubrication, enjoyment, orgasm, pain, partner relationship and cognition. The distinction between the two domains of physical arousal reflects the distinction between subjective and physiological aspects of arousal disorder [15].

The Personal Experiences Questionnaire (PEQ)

It was developed by Dennerstein and her colleagues for assessing the sexual functioning of middle-aged and older women. The original version of the PEQ have 19-item inventory, which reflects six major dimensions: feelings for partner, sexual responsiveness, sexual frequency, libido, vaginal distress/dyspareunia and partner problems. Internal consistency and test–retest reliability coefficients were within the acceptable range for the most part but several coefficients were rather low [16].

The Profile of Female Sexual Functioning (PFSF)

It is a self-report inventory developed by Proctor & Gamble Pharmaceuticals Inc. (Mason, OH, USA) for women suffering from low sexual desire. This instrument was evaluated in 332 oophorectomized women with hypoactive sexual desire disorder (HSDD) and 258 age-matched non-oophorectomized controls. It includes 37 items organized into seven domains (sexual desire, arousal, orgasm, sexual pleasure, sexual concerns, sexual responsiveness and sexual self-image), characterizing female sexual function in menopausal women with HSDD. PFSF have excellent reliability and validity. Test-retest and internal consistency reliability were well within accepted limits. This instrument is specifically designed for measurement of sexual desire in women with low libido. A brief form of the PFSF has also recently been developed [17,18].

The Sexual Interest and Desire Inventory (SIDI)

It is a brief, clinician-administered rating scale specifically designed for measuring severity and change in response to treatment of HSDD in premenopausal women. Initially it had 17-items, which has since been paired down to a 13-item rating scale. SIDI have high internal consistency reliability ($\alpha=0.90$), and has demonstrated discriminant validity relative to cases versus non-cases of HSDD, and has shown good convergent validity with domains from the FSFI in the

same study sample. The SIDI has a somewhat unique measurement format in that items address both intensity and frequency of sexual events [19].

Female Sexual Distress Scale

It is a self-reported, unidimensional scale which measures sexually related personal distress. 'R' version has an additional desire item. It contains 12 items. It is very easy to use and takes approximately 5 minutes time to administer it. It is a good scale to differentiate FSD patients from normal and is also sensitive to treatment induced changes. A cutoff score of ≥ 15 is kept as satisfying the criterion for personal distress [20].

Structured Diagnostic Method (SDM)

It is a novel instrument which is being used to diagnose subtypes of FSD in clinical studies. It consists of four sexual assessment questionnaires (SAQs) followed by a structured interview [21]. Its components are:

1. Life satisfaction checklist which contains nine items assessing overall quality of life, including a question specific to sexual function. Its domains are: life as a whole, self-care, vocational situation, financial situation, leisure situation, sexual life, partner relation, family life and contact with friends.
2. Subset of questions regarding sexual function from the Medical History Questionnaire. Medical history questionnaire consists of 20 items of general well being like any significant medical history, allergy or adverse reaction to drug etc.

3. SFQ (sexual function questionnaire) and
4. FSDS (Female sexual distress scale)

Sexual Dysfunction Questionnaire

It is self-administered 19 items scale. It is brief i.e. require approximately 5 minutes to administer. It is also suitable for use in both clinical as well as research settings. It has good validity and test retest reliability. Apart from helping in diagnosis, it can also detect treatment induced changes [22].

Sexual Activity Questionnaire Function Scale (SAQ-F)

It is brief questionnaire consisting of 10 items. All except one have 4-graded categorical scale. It takes 5–10 minutes to fill out [23].

Sexual Arousal and Desire Inventory (SADI)

It is a scale to assess arousal and desire in both men and women. It is a Likert based scale rated on 6 points. It takes about 10 minutes to fill out. It can also be used irrespective of sexual orientation or relationship status [24].

ASSESSMENT TOOLS FOR SEXUAL DYSFUNCTION IN DEPRESSED PATIENTS

As there are high incidence of treatment-emergent sexual dysfunction, it is important to establish a baseline of dysfunction using a valid and reliable rating scale before assessing the impact of

pharmacotherapy on sexual function [25,26]. A review of 79 randomized controlled trials revealed that 75% patients spontaneously report sexual side-effects, while only 8% report after using specific instruments [27]. Of the studies using specific sexual function scales, most of them were clinician administered, while nonspecific adverse event check lists were used in only 18% of trials. Several validated measures of sexual dysfunction are available for clinical use in depressed populations.

Arizona Sexual Experiences Scale

The Arizona Sexual Experiences Scale (ASEX) is a brief self-report scale for assessment of pharmacologically induced sexual dysfunction in the patients of major depression [28]. Five global aspects of sexual dysfunction i.e. drive, arousal, penile erection /vaginal lubrication, ability to achieve orgasm, and satisfaction with orgasm are measured by this scale. The distinction between sexually active vs. non-active participants poses an important question on scale validation that has not been addressed yet. High internal consistency and test–retest reliability are the qualities of ASEX. It also has good validity, sensitivity and specificity [28]. The ASEX has been used in many clinical trials and also validated in patients with schizophrenia [29] and end-stage renal disease [30]. While the ASEX is a useful clinical tool, the assessment of each domain does not provide details of the various facets of sexual dysfunction in that area.

Changes in Sexual Functioning Questionnaire

This scale comprises 36 items for males and 35 items for females [31,32]. This scale addresses five dimensions: pleasure, desire/frequency, desire/interest, arousal, and orgasm. All of the scales, shows moderate to high internal consistency ($\alpha=0.64-0.75$) except for orgasm in men. This scale has good concurrent validity and ability to distinguish between depressed and nondepressed samples [32]. The abbreviated version of this scale has 14 items and assesses three domains of sexual response corresponding to desire, arousal, and orgasm. This scale requires 5 to 10 minutes for administration [24].

Psychotropic-Related Sexual Dysfunction Questionnaire

The Psychotropic-Related Sexual Dysfunction Questionnaire contain 7 items and require 5 minutes for administration [33]. The first two items address spontaneous report and physician inquiry about sexual dysfunction. The next four items assess desire, arousal, and ejaculation/orgasm, while the final item assesses the degree of tolerability of any change in functioning. This scale has high internal consistency and reliability. This scale had a high correlation with clinical global impressions of sexual functioning ($r=0.79$) and moderate correlations with the Hamilton Rating Scale for Depression ($r=0.63$) [34]. This scale has high sensitivity. Although this is a brief scale, yet it does not capture specific elements of

sexual dysfunction.

Sex Effects Scale

This scale has been used to compare sexual side effects of different antidepressants. It is a self-report or interview-based tool for both male and female. This scale assesses changes in three domains: desire, arousal, and orgasm. Two additional items evaluate global satisfaction with sexual function. The scale showed high validity, reliability, internal consistency and inter-rater reliability. It is particularly valuable for assessing side-effects related to medication. However, it lacks the questions to address psychologically induced symptom, therefore its role in measuring the effectiveness of sexual dysfunction therapies would be limited [35].

CONCLUSION

Various assessment tools exist to describe sexual dysfunction in females. Clinicians and researchers are encouraged to select one or two instruments that meet their needs according to individual patient and use them consistently for the assessment of sexual dysfunction in females. Current research is being done to make assessment tools easier to apply, more objective and quantitative.

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Pharmacological Management of Sexual Dysfunction in Females

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ABSTRACT

Human sexuality has multiple facets and dimensions. Treatment of sexual dysfunctions and been attempted since ages. However, there has been limited progress in management of sexual dysfunctions in females. Flibanserin is a recently approved molecule for treatment of hypoactive sexual desire disorder (HSDD) in females. It is a 5-HT_{1A} receptor agonist and 5-HT_{2A} receptor antagonist. Other treatment modalities include local and systemic hormonal agents including estrogen, progesterone, testosterone, ospemifene and tibolone. Combination treatments are also being investigated. To provide holistic care to the patient, one must always include psychological treatments in the management plan of the patient.

KEYWORDS: Female sexual dysfunction, Flibanserin, Ospemifene

INTRODUCTION

Since ages, people have been trying their best to understand human sexuality and have been working to improve sexual experiences. Sexual dysfunctions and their remedies have been described even in ancient medical practices like Ayurveda [1]. However, human sexuality has been difficult to understand because of its complex and multi-dimensional nature. It involves biological, psychological, social and possibly spiritual dimensions of life [2]. Healthy sexual functioning is one of the indispensable keys to harmonious marital life. Poor sexual health leads to frustration, low self-esteem and affects day to day functioning of a person [3]. It was the pioneering work of Masters and Johnson that lead to beginning of behavioral/psychotherapeutic management of sexual disorders [2]. Medical management of sexual disorders had its true beginning with the advent of sildenafil, a phosphodiesterase type-5 (PDE-5) inhibitor. Sildenafil was tried in women too but it did not bring the same response as it did for males [2]. For a long time, there were no specific drugs for treatment of sexual dysfunction in females, and they could be offered either some of the psychotropics or hormonal treatment in few of the cases [2,3]. The arena is likely to change soon with advent of new drugs like flibanserin. Nosology, classification and approach to female sexual dysfunction (FSD) has been discussed in detail

elsewhere in this publication. This article shall focus on available pharmacotherapies for treatment of sexual dysfunction in females. For the purpose of this article, the diagnostic labels Hypoactive Sexual Desire Disorder (HSDD) and Female Sexual Interest/Arousal Disorder (FSDD) shall be used interchangeably. The discussion shall focus on flibanserin, hormonal therapies, psychotropics and combination treatments.

FLIBANSERIN

Flibanserin is a 5-hydroxytryptamine 5-HT_{1A} receptor agonist and 5-HT_{2A} receptor antagonist, with additional moderate antagonistic₄ 5-HT_{2C}, 5-HT_{2B} and dopamine D₂ receptors. As one can notice, it inhibits the 'anti-sexual' effects of serotonin and enhances 'pro-sexual' effect of dopamine. In total, flibanserin has a mixed mechanism of action and results in modulation of CNS neurotransmitters that leads to enhanced libido. Trials of this drug have revealed that it brings statistically and clinically significant improvement in number of satisfactory sexual events (SSE), level of desire and reduced distress [5]. The rate of serious adverse events with flibanserin is <1% [5-7]. Mean half-life of flibanserin is 11 hours and is primarily metabolized by CYP3A4 and to a minor extent by CYP2C19 [8]. Common side effects include fatigue, somnolence and syncope but most patients are likely to develop tolerance to the same. It is contraindicated

in patients with hepatic failure and those taking alcohol. It is believed that combination of flibanserin with alcohol increases risk of severe hypotension and syncope [5,6,8]. The US-FDA has approved the use of flibanserin for treatment of acquired generalized HSDD in premenopausal women and the dose is 100 mg daily in the night [2].

One needs to note that the road to approval of flibanserin for use in HSDD and has been full of hurdles. There has been numerous discussion on various aspects of the drug as well as the medical condition for which it is being recommended. There have been intense discussions and controversies regarding the validity of diagnosis of HSDD, medicalization of a normal human function as sexuality, problems with needed end points, lack of clear guidelines regarding conduct of clinical trial in this arena, and finally, the concerns about true efficacy and safety of the drug itself. The drug has been in market since its approval on 18th August 2015, it is yet to pass the test of time [2,4,5,6,8].

HORMONAL THERAPIES

There is no doubt about role of hormones in sexual functioning of men and women, and it is a well-known fact that the major milestones in the sexual life of a lady viz. menarche, pregnancy and menopause are all marked by cascade of hormonal changes. Hormones not only bring about age related changes in genitalia but also modulate response to internal and external

cues. In other words, hormones have a major role to play in preparing a lady physically as well as mentally for sexual activity [9]. Despite advances in research about hormones, their receptors, synthesis, intracrine pathways, etc. there has not been any clear understanding about measurement of levels of hormones and their utility in clinical therapies [10]. It is important to note that hormonal therapies have been studied mostly in postmenopausal women and the studies of the same in premenopausal women are inadequate [11]. Few of the available hormonal treatment for FSD are reviewed here in the following section.

Hormone Replacement Therapy

Hormone replacement therapy (HRT) can be used in the form estrogen plus progesterone in postmenopausal women with intact uterus or only estrogen in women who have undergone hysterectomy [12]. This treatment is likely to bring small to moderate improvement in pain symptoms of postmenopausal women. It is more useful in women who are also suffering from other postmenopausal symptoms or when used in early postmenopausal years [13]. However, HRT has to be given only by a trained specialist either a gynecologist or endocrinologist, as per the latest recommendations and guidelines.

Tibolone

Tibolone is a synthetic steroid which has selective tissue estrogenic regulator

activity. It has many metabolites and together, they possess activities of estrogen, progesterone and androgens. In addition to its use to treat postmenopausal symptoms, it has been found to increase vaginal blood flow, and has been shown to improve sexual desire and responsiveness to partner initiated sexual activity [14,15].

Androgens

Testosterone has been investigated for use in FSD mostly in postmenopausal women. While it is not recommended to use testosterone preparations for general use in FSD, it can be used in conditions where low levels of testosterone have been documented [16]. Preparations of testosterone include transdermal patches, creams and gel. They can be administered systemically or locally. Specific information regarding use of vaginal testosterone preparations are available for patients of breast cancer who are also receiving aromatase inhibitors. Use in such patients has resulted in decreased pain and improved desire [16]. Some authorities have also recommended use of testosterone preparations in addition to HRT being administered for postmenopausal symptoms [17].

Local Estrogen Therapy

Menopause may sometimes lead only to local symptoms by way of vulvo-vaginal atrophy (VVA). Local estrogen therapy (LET) is the first line treatment for the same [11]. Low dose intra-vaginal estrogen in form of ring, cream, tablet, gel

or suppository may be used. This modality has been found to reasonably safe and effective in studies done up to one year [11]. Major concern is rise in systemic estrogen levels. Recently, very low LET is also being investigated for VVA [18].

Ospemifene

Ospemifene is a selective estrogen receptor modulator, which is approved by US-FDA for systemic treatment of dyspareunia associated with postmenopausal vulvovaginal atrophy [19]. Ospemifene selectively binds to estrogen receptor (ER)- α and ER- β . It is highly selective in its action on vaginal epithelium. It has been found to be reasonably safe as far as estrogenic action on breast and endometrium is concerned. Dose of ospemifene is 60 mg/day. Relief in dyspareunia and vaginal dryness is expected by 4 weeks and generally leads to significant improvement in all domains of sexual activity by 12 weeks [19]. Overall acceptability of this drug is good among patients and drop-out rates are low [4,19,20].

PSYCHOTROPICS AND OTHER CENTRALLY ACTING AGENTS

FSD, when it is present in background of depression or other psychiatric illnesses, it is known to improve with treatment of the baseline illness. For independent FSD, there has only been a limited utility of psychotropics. Bupropion and trazodone have been tried for this purpose but the results are not encouraging [21]. Other

compounds like apomorphine and investigative drugs like bremelanotide have also been tried but without any reasonable success [22].

COMBINED PHARMACOTHERAPY ON DEMAND

On demand treatment with PDE-5 inhibitors has been a huge success in males but these drugs have not yielded similar results in females. Till date, there are no approved on-demand treatments for FSD. However, research is under progress to find an answer to this problem. The combinations that have been tried are sublingual testosterone with sildenafil, and sublingual testosterone with buspirone [23,24]. Both physiological and subjective measures of sexual functioning have shown significant improvement and have paved way for future trials [23,24]. On demand treatments have their own potential benefits of avoiding concerns related to chronic pharmacotherapy. It could also pave way the way for more personalized treatment, instead of the classical 'one size fits all' approach.

CONCLUSION

Pharmacotherapy for FSD is largely an upcoming field and a lot is yet to be revealed. Experts have agreed that sexual desire is difficult to quantify, and perfect end points have yet not been discovered or

validated . At the same time, there is no escaping from the fact that unaddressed FSDs are a huge unmet need in clinical practice. While in quest of pharmacological treatment of FSD, one must not undermine the psychological aspects sexual relationships and the same must always form part and parcel of holistic care of the patient.

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Non-Pharmacological Management of Sexual Dysfunction in Females

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ABSTRACT

Sexuality is a major part of human existence. There are three principle stages of sexual response cycle - desire, arousal and orgasm and females are affected by various dysfunctions related to each stage. There are wide range of etiological factors contributing to these disorders Treatment involves a wide range of pharmacological and psychological approaches. There is a lack of literature on the non pharmacological measures for treatment of female sexual dysfunctions. This review article focuses on the available and effective non pharmacological therapeutic approaches to female sexual disorders.

KEYWORDS: Anorgasmia, Arousal, Dyspareunia, Vaginismus, Female sexual dysfunction, Non pharmacological management

1. INTRODUCTION

Sexuality is considered a taboo in India and female sexuality even a greater taboo [1]. Although beautiful paintings in Ajanta-Ellora, Khajuraho caves and several other Indian temples, made many centuries ago, depict human sexuality and even female sexuality in different forms. They provide the message that all aspects of human life need to be celebrated and expressed, so it is really an enigma how gradually sex acquired its taboo and became a matter of shame in modern era. As male sexual dysfunction is quite apparent because of incapacity for erection or erectile dysfunction or even premature ejaculation, female sexual dysfunction is not so apparent, so besides being a taboo and due to conservative tradition, even the lack of being apparent make it even rarer entity to be reported or studied unless the symptoms become debilitating. We are here in 21st century and gradually women are opening up regarding the sexual practices, knowledge, awareness and even their sexual health and dysfunctions but still this area is relatively unexplored in comparison to male sexual dysfunctions and other areas of human physiological behaviour [2]. So here we are to discuss the management of female sexual dysfunctions particularly pertaining to their non-pharmacological management. The World Psychiatric Association has defined sexual health as “a dynamic and harmonious state involving erotic and reproductive experiences and fulfilment, within a broader physical, emotional, interpersonal, social and spiritual sense of well-being, in a culturally informed, freely and responsibly chosen and ethical framework not merely the absence of sexual disorders” [3].

1.1 The Sexual Response Cycle

Master and Kaplan pioneering work revealed that in both sexes the sexual response cycle is often categorised in four phases of desire, excitement, orgasm and resolution [4].

The first stage is of sexual desire which consists of motivational or appetitive aspects of sexual response. Sexual urges, fantasies and wishes are included in this phase. The sexual excitement is the second stage in which subjective feeling of sexual pleasure and accompanying physiological changes occur (penile erection in males, vaginal lubrication in females). Plateauing is sometimes categorised as a distinct phase of heightened state of excitement attained with continued stimulation with marked sexual tension setting the stage for the orgasm. The third stage is of orgasm or climax defined as the peak of sexual pleasure, accompanied by rhythmic contractions of the genital musculature in both males and females. There can be different patterns of orgasms in females which is followed by rapid resolution phase. Then there is refractory period in males, which is generally absent in females [5].

1.2 Concept of female sexuality

In India, many females do not like to appreciate erotic aspect of conjugal life and even do not have names for their genitals [5].

Though the perception of modern Indian women is transforming, many of them still consider the sexual activity a duty, an experience to be submitted to, often from a fear of abuse [6].

As per Sigmund Freud, both sexes seem to pass through the early phases of libidinal development in the same way. Psychological differences between male-female sexuality begins during phallic phase, with the appearance of Oedipus Complex, however the difference becomes most clear only during the genital phase.

1.3 Aetiology of female sexual dysfunction

Worldwide, female sexual dysfunction (FSD) is a highly prevalent problem for 38%-63% of women [2]. Prevalence in different stages of sexual cycle in many western studies are low sexual interest 17% to 54.8% [7,8,9,10,11,12] impaired arousal 12.2% to 17.0% [9, 13], impaired lubrication 2.6% to 31.2%, impaired orgasm 3.7% to 28.6%, pain 3.4% to 20.3%. Mostly females in India consider themselves to be passive partners and there is very less awareness regarding female sexual dysfunction and there is always under reporting because of social stigma. It is noteworthy that in one of the studies none of the affected participants volunteered for treatment of any diagnosable sexual disorder [14,15]. As per many Indian studies, female sexual dysfunction prevalence was found in

majority of sexually active fertile females [16].

The more specific aetiological factors can be considered using the 'three windows approach' [17]. The first window-the current situation, the second window-vulnerability of the individual like negative attitude, need to maintain self-control, earlier experiences of sexual abuse or trauma, propensity to sexual inhibition (The Dual Control Model) [18], the third window-health related factors

that alter sexual function like mental & physical health, damage to neural control of genital response, endocrine mechanism alteration, metabolic disorders, medication side-effects, anti-depressants, anti-psychotics, anti-hypertensives [11], Age [2], psychological factors like stress, conflicts, depression, anxiety, interpersonal factors, literacy, socio-economic status, educational status [19],

ICD 10	DSM-5
<p>1. Lack or loss of sexual desire: as a principal problem, initiation of sexual activity less likely</p> <p>2. Sexual aversion and lack of sexual enjoyment: prospect of sexual interaction associated with negative feelings, fear , anxiety leading to its avoidance, lack of appropriate pleasure inspite of normal sexual responses and orgasm, including anhedonia (sexual)</p> <p>3. Failure of genital response: vaginal dryness or failure of lubrication, psychogenic , pathological (infection), oestrogen deficiency, includes female sexual arousal disorder</p> <p>4. Orgasmic dysfunction:absent or delayed orgasm, may be situational, psychogenic , invariable due to physical or constitutional factors</p> <p>5. Non organic vaginismus: perivaginal muscular spasm making enile entry impossible or pain, local cause of pain to be excluded</p> <p>6. Nonorganic dyspareunia: pain during sexual intercourse, considering only emotional factors, excluding local pathology or other primary sexual dysfunctions like vaginismus</p> <p>7. Excessive sexual desire: excessive sexual drive usually in late teenage or early adulthood, excluding early dementia or affective disorders</p> <p>8. Other sexual dysfunction not caused by organic disorder or disease</p> <p>9. Unspecified sexual dysfunction not caused by organic disorder or disease</p> <p>10. Not listed</p>	<p>1. Not listed</p> <p>2. Not listed</p> <p>3. Sexual interest/arousal disorder: three out of six absence of interest or initiation, unreceptiveness in sex,even to internal or external cues,absent thoughts or fantasies,genital or non-genital sensations</p> <p>4. Female orgasmic disorder:marked delay, infrequency or absence of orgasm and/or markedly reduced orgasmic intensity</p> <p>5. Vaginismus (not due to general medical condition)</p> <p>6. Genito-pelvic pain/penetration disorder:one or more of persistent or recurrent difficulties in vaginal penetration,may due to pelvic or vulvo-vaginal pain or tightening of pelvic floor muscles, associated fear and anxiety in anticipation, during or as a result of the act</p> <p>7. Not listed</p> <p>8. Other specified sexual dysfunction: specific reason to be mentioned like sexual aversion</p> <p>9. Unspecified sexual dysfunction: in case of insufficient information to make more specific diagnosis</p> <p>10. Substance / medication-induced sexual dysfunction: temporal correlation with substance intoxication, withdrawal or exposure</p>

Table No.1: Classification of female sexual dysfunction

cultural factors, duration of marital status, even marital status [10] , medical (like thyroid dysfunction, hypertension but diabetes found to be more contributory), and gynaecological disorders (PID, endometriosis, fibroid, uterine prolapse), surgical procedures like hysterectomy [20], medicines, have all been implicated in female sexual dysfunction in various studies [21].

2. EVALUATION

For proper management of females with sexual dysfunction, complete evaluation is essential. It includes history taking (sexual, medical and psychosocial), physical examination, laboratory tests (routine and specific) and referrals from other specialists. A proper history taking is essential for finding out the aetiology and minimising the need for investigations.

2.1.1 Sexual history

Make patient comfortable
Non judgemental attitude
Ensure confidentiality
Know patient's cultural background [22]
Basic questions [23-27] should include details of:

- Libido/interest
- Arousal/performance
- Orgasm/satisfaction
- Pain/vaginismus

Areas such as sexual fantasy, masturbation, genital functioning, and contraception should be explored as it can give great insight into the problem [27,28]. It is essential to know the site, type, severity, onset, duration of pain. Repeated

pain can lead to lack of arousal, failure to achieve orgasm, and loss of sexual desire. A history of time spent in various activities should be enquired.

2.1.2 Psychosocial history

A detailed sexual history questionnaire exploring current sexual interactions, social and sexual discord, history of sexual abuse or trauma, gender identity conflicts and preferences, state of mood and affect, and cultural and religious influences is useful. Such questionnaires are helpful in identifying psychological contributions to sexual dysfunction. The questionnaires can also provide indicators for problematic personality features, comorbid affective disorders, poor sexual knowledge and marital discord.

Symptoms of anxiety or depression, altered self-esteem and coping skills, past and present partner relationships, history of sexual trauma/abuse, occupational and social stresses, economic status, and education should be assessed. Given the interpersonal context of sexual problems in men and women, the clinician should carefully assess past and present partner relationships.

Another important aspect of psychosexual history is inquiring specifically about the quality of the relationship between the couple with respect to nonsexual factors. Lastly, expectations from the treatment should be taken into consideration [22].

2.1.3 Medical history

While evaluating women careful medical history should be obtained about any health problem that might affect sexual anatomy, the vascular system, the neurological system, and the endocrine system. Indirect causes i.e., factors that cause chronic pain, fatigue, and malaise may interfere with the vascular and neurological pathways can cause dyspareunia [24].

2.2 Physical Examination

In females, genital examination is often highly informative, especially in cases of dyspareunia, vaginismus, with a history of pelvic trauma and with any disease potentially affecting genital health. When the history indicates, the opportunity for Pap smear/STD investigation should be taken [26, 28-31].

2.3 Recommended Laboratory Testing

Recommended laboratory tests for women with sexual problems typically include fasting glucose, cholesterol, lipids hormonal profile and X-ray spine for spina bifida. Additional laboratory tests (e.g., thyroid function) may be performed at the discretion of the clinician, based on the medical history and clinician's judgment.

When an infective etiology for dyspareunia remains possibility, vaginal, cervical and vulval discharge microscopy/cultures should be performed [28, 30-35]

2.4 Specialist Consultation and Referral

Patients with history of medical problems should be referred to appropriate speciality to evaluate the organic cause [22].

Female Sexual Function Index (FSFI) [36] is a questionnaire that can be easily used by health professionals to complement the diagnosis and to detect treatment-related changes. The FSFI recognizes the need for a subjective criterion in defining sexual dysfunction and determines, through the nineteen item answers, five separate domains: (a) desire/arousal, (b) lubrication, (c) orgasm (d) satisfaction and (e) pain. Another questionnaire widely used is the sexual history form. This instrument, through 28 items, evaluates the frequency of sexual activity, desire, arousal, orgasm, pain and overall sexual satisfaction for women and men [37].

3. NON- PHARMACOLOGICAL MANAGEMENT OF FEMALE SEXUAL DISORDER

Management of sexual dysfunction follows a patient centric approach. After evaluation of the condition, understanding the relationship issues, screening for sexual knowledge of the patient, a possible etiological basis of the dysfunction is reached. The aetiology could be purely organic, purely

psychological or both. Also there could be a co morbid psychiatric condition which could be primary or secondary. In case, the condition is purely organic, referral is made to appropriate specialist.

In case the psychiatric condition is primary, treatment of the condition assumes priority. If the condition is psychological and the patient has a high motivation and adequate psychological sophistication then a non pharmacological approach or a combination of pharmacological and non pharmacological approach is taken [22].

Once the diagnosis is made after detailed assessment the process of treatment is initiated.

The basic principles of treatment are as follows:

- The selection of the treatment, in most cases is as per patients' choice.
- The professional helps the patient make a choice.
- The professional is expected to provide all details of the treatment options to the patient in a way that can be fully understood by the patient.
- In the absence of a partner, no patient should be refused.
- The treatment goals should be fixed at the outset.
- Detailed information of the treatment chosen and the contact person in case of problems encountered should be fixed beforehand [38].

After a detailed history, physical and laboratory investigations and requisite consultation, the couple/ patient must be explained about their problem and the possible factors contributing to it. It is always preferred that after the entire issue is discussed the feedback of it should be taken [39].

3.1 Treatment Options

3.1.1 General measures

The general measures for treatment of sexual dysfunction include Sex Education and Relaxation training. These are the measures which are found to be useful in all cases, immaterial of the type of dysfunction. Some consider that the process of sex education and relaxation should be carried out over 4 sessions [22].

3.1.1.1 Sex Education

This the first step and it aims to provide accurate information and thereby reducing the anxiety, dispelling any associated myths or any unrealistic expectations that one may have and finally normalizing the experience. Among the various manuals for sex therapy, Avasthi and Banerjee (2002) have had a manual made for patients from the Indian subcontinent [40].

The important ingredients of sex education [22] are as follows:

A detailed knowledge about the sex organs, puberty, menstruation, pregnancy

in females and should be provided. Also other issues like stages in sexual intercourse and the normal sexual response is to be discussed.

- The couple/ patient should be explained about the normal variation from person to person on matters of sexual desires.
- Knowledge on the importance of timing the sexual activity.
- How to say no to the partner and how to accept the refusal from a partner gracefully without any sense of insult.
- Education about masturbation.
- Helping shy individuals to initiate sex.
- Encouraging patients to express their needs and the type of stimulation they like before and after orgasms.
- Help them know about multiple orgasms.

An important part of sex education is identifying the sexual myths in a person and to address those. The commonest myths [22] include:

- Women should not initiate sex as men should be the leader and initiator
- A woman should not enjoy sex and should not masturbate.
- A woman should never say no when her partner approaches her for sex
- All physical contact should lead to sex and sex means intercourse.
- Good sex always leads to wild orgasms
- Sex happens naturally .
- If the sex is not good it implies that the relationship has some problems.

3.1.1.2 Relaxation

Relaxation is also considered a general measure in the management of sexual dysfunction. Jacobson progressive muscular relaxation combined with Biofeedback may be used for objective assessment of anxiety and mastering it.

There are different therapies used for sexual dysfunctions like psychodynamic, rational emotive, interpersonal, systematic desensitization, Master and Johnson's behaviour therapy.

Many therapists use terminology used by Master and Johnson for homework assignment. It consists of three stages. The first stage is known as nongenital sensate focus consists of touching your partner without genital contact and for your own pleasure. The second stage, genital sensate focus, consists of caressing in a sexual and arousing way and to encourage the couple to be more open about their feelings and desires and stage three consists introduction of sexual intercourse into therapy.

There are also certain models prescribed for better management of females with sexual dysfunctions like TOP model prescribed in Gynaecological setting for better management of females with sexual dysfunctions. It consists of 3 stages, where in the first stage, the gynaecologist teaches about the physiology of female sexual responses. The second stage consists of orienting women towards sexual health and about the concept sexuality and the third stage consists

permitting and stimulating sexual pleasure which is based on the idea that sexual pleasure is a right and is essential for emotional and physical health of everyone [41].

3.1.2 Treatment of specific dysfunction

3.1.2.1 Impaired sexual interest in females

- Group therapy in conjunction with orgasm consistency training, which consists of directed masturbation and sensate focus exercises [42].
- A comprehensive program of multimodal cognitive behavioural approach which entails sexual intimacy exercises, sensate focus, communication skills training, emotional skills training, reinforcement training, cognitive restructuring, sexual fantasy training and couple sex group therapy [43].
- Multistage treatment approach combines a lot of the concepts mentioned below like assessment, affectual awareness, insight and understanding, cognitive, systemic and behavioural therapies.
- Affectual awareness training: To identify negative emotions through techniques such as list making, role-playing, and imagery
- Insight and understanding: To educate couples about their feelings using a variety of strategies like gestalt therapy and transactional analysis

- Cognitive and systemic therapies are included to provide coping mechanisms as well as to resolve underlying rational problems
- Behavioural therapy is aimed at initially improving nonsexual affectionate behaviour with an eventual goal of introducing mutually acceptable sexual behaviour.

3.1.2.2 Arousal disorder

There is not clearly validated treatment for this disorder. However sensate focus, Cognitive behaviour therapy, systematic desensitization, individual and couple therapy, directed masturbation and communication skills has seen to yield moderate results.

Besides these measures there have certain devices like Eros Clitoral Therapy Device (Eros CTD), has been found to be effective. This device increases the blood flow to the clitoris with gentle suction [45,46]. Two short term studies have found it useful in sexual arousal disorder [46,47]. Also dyspareunia associated with diminished desire may decrease when lubrication is improved [48].

3.1.2.3 Sexual aversion disorder

A detailed assessment of any trauma, rape and relationship issues should be done. General behavioural measures like relaxation, sex education, clarification of myths and sensate focus is useful. Usually couple and individual therapy and

behavioural therapy by way of progressive exposure to feared stimuli is used.

3.1.2.4 Orgasmic disorder

Treatment usually includes correcting any negative attitudes towards ones' body and towards sex and encouraging positive sexual attitudes. Teaching self pleasuring exercises, masturbation with vibrator, enhancing fantasy, Kegel's exercise to facilitate orgasms, reducing anxiety with sensate exercises [49].

In a study by Wincze and Caird, a comparison was made between standard systematic desensitization versus video desensitization. It was found that video desensitizing was more effective however only 25% of in orgasmic women were able to achieve orgasm at the end of treatment. It was felt that directed masturbation training program along with desensitization would be more effective [50].

3.1.2.5 Dyspareunia

This is one of the areas which has been grossly ignored and vaginal dilation has been used most widely. Here the various general measures and sensate focus, sex education is used. Other measures like positive self talk, progressive muscle relaxation prior to sexual activity, physical therapy which include Kegel's exercise with relaxation and biofeedback

has been found to be of some use [51]. Also it is seen that information about suitable intercourse positions was also useful.

3.1.2.6 Vaginismus

Correcting any negative attitude towards sex or any myths and sex education is essential. Specific management involves first helping the women develop positive attitude towards her sex organs, then moving on to pelvic muscle exercises, to vaginal penetration and vaginal containment to movement during vaginal containment. Cognitive behaviour therapy has been found to be most effective in these cases [3].

Just as the planning of the therapy should be done in detail so also the termination of treatment should be planned much in advance, infact at the beginning of the therapy and the patient should be well aware of the plan. During the later part of the therapy the interval between the sessions can be extended and a formal plan in case of relapse and follow up should be made.

4. CONCLUSION

Though we are in the 21st century, yet in some culture such as ours, discussion on female sexuality and sexual dysfunction seems to be a taboo. The process of management of female sexual dysfunctions is complex and involves,

detailed history, examination, investigations in addition to assessing their knowledge, myths and psychological orientation. Once these things have been done a plan of treatment is made in consultation to the patient. Still, medical research in this field is very deficient. Most of the studies in our country on sexual dysfunctions are hospital based and hardly any of them are community based and there are still fewer studies on female sexual dysfunctions. There is lack of studies in the management of sexual dysfunctions and non pharmacological management is also a much neglected area. There is strong need to perform different studies in this area to find out other effective means for management of female sexual dysfunctions.

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