Sexual Medicine Committee

Newsletter - 4

Hypoactive Sexual Desire Disorder (HSDD)

President FOGSI 2020

Dr. Alpesh Gandhi

Secretary General

Dr. Jaydeep Tank

Vice President Incharge

Dr. Ragini Agrawal

Sexual Medicine Committee

Chairperson

Dr. Niraj Jadav

National Co-ordinator

Dr. Padmini Prasad

North Zone

Dr. Vani Puri

Dr. Savana Chongtham

west zone

Dr. Archana Shah

South Zone

Dr. Kavitha Gautham

East Zone

Dr. Queen Aditya

Editor in Chief

Dr. Alok Sharma

Sub-Editor

Dr. Shail Kaur

Dr. Hafizur Rahman

Dr. K.S. Jeyarani Kamaraj, Author
MBBS., M.D., DGO., Dip. Reprod. Med. (GERMANY), FICOG.,
Phone : +91 9543187679 Email : jeyaranikamaraj@gmail.com
Website: www.aakashfertilitycentre.in

Hypoactive Sexual Desire Disorder (HSDD)

Hypoactive sexual desire disorder (HSDD) is the most prevalent sexual disorder for women of all ages, but it is also one of the most difficult to address.

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* **(DSM-IV TR) and the World Health Organization's International Classifications of Disease-10 (ICD-10) established that the definition of hypoactive sexual desire disorder (HSDD) should include not only the lack or absence of sexual fantasies or desire for any form of sexual activity, but also the presence of personal distress and/or interpersonal difficulties.**

The broadened definition of HSDD may include any of the following:
(1) Lack of motivation for sexual activity manifested by either reduced or absent
   a. Spontaneous desire sexual thoughts
   b. Fantasies
   c. Responsive desire to erotic cues and stimulation
   d. Inability to maintain desire
   e. Interest through sexual activity.

(2) Loss of desire to initiate or participate in sexual activity, including behavioral responses such as avoidance of situations that could lead to sexual activity, that is, not secondary to sexual pain disorders, **and is combined with clinically significant personal distress that includes frustration, grief, incompetence, loss, sadness, sorrow, or worry.**

The role of Desire in women's sexual response models

- An awareness of sexual desire is not the most frequent reason women accept or initiate sexual activity.
- Sexually healthy women are frequently unaware of sexual spontaneous thoughts.
- Sexual fantasies are often deliberate means of focusing on the sexual stimulus, rather than an indication of sexual desire.
- The sexual and larger context is integral to a woman's sexual function and dysfunction.

- The phrases of a women's sexual response are not discreet, but there is considerable overlap.

Prevalence

- One in ten women may receive a diagnosis of HSDD.
- The prevalence of HSDD ranged from 6%–13% in Europe and 12%–19% in the US.
- The PRESIDE study was conducted with more than 31,000 women aged over 18 years in the US states commonly reported HSDD, peaked in middle-aged women.
    - 8.9% between 18 - 44 years
    - 12.3% between 45–64 years
    - 7.4% in women 65 years old or older.
- Distressing desire problems increased 20% higher in postmenopausal than in premenopausal women.
- Surgically menopausal women were significantly more likely to experience HSDD than their age-matched counterparts who did not have surgery.
- A younger age was a risk factor for being emotionally and psychologically distressed by low desire, with a less active sex life and decreased sexual and relationship satisfaction.

Consequences

The negative personal issues associated with decreased sexual interest and HSDD include

- Feeling less feminine,
- Feeling like a sexual failure,
- Low self-esteem,
- Insecurity,
- Inadequacy and letting partner down,
- Feel frustrated,
- Concerned,
- Unhappy,
- Disappointed,
- Hopeless,
- Troubled,
- Ashamed,
- Bitter,
- Depression

Need of the hour:

It is a duty of health care providers to address the issue of sexuality routinely in clinical practice and to recognize the distress eventually associated with HSDD. However, it is still quite difficult to engage in sexual conversation because of many barriers and misconceptions, including the idea that sexual problems are a normal part of aging, menopause, long relationship, etc, and do not deserve specific treatments.

Differentiating HSDD from normal fluctuations in sexual desire:

What is normal desire ????

- Each woman will have her own definition of what is normal sexual desire based on her culture, background, sexual experiences and her own biologic drive.
- Most women will also have some day-to-day variability in sexual interest based on stressors, other life events, and neuroendocrine functions.
- In addition to the lack of consensus about what is “normal” desire, female sexual response is variable, with no empirical data to support one theoretical model over another. It may be helpful to understand the prevailing theoretical models used to understand a woman’s sexual response evolved over time.

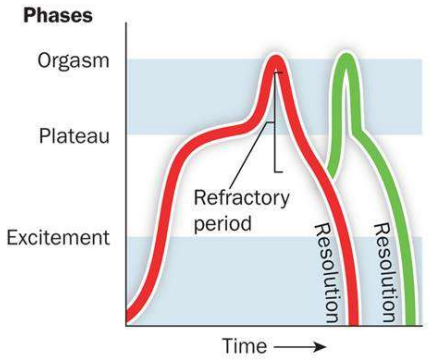
Three Models:

Linear models:

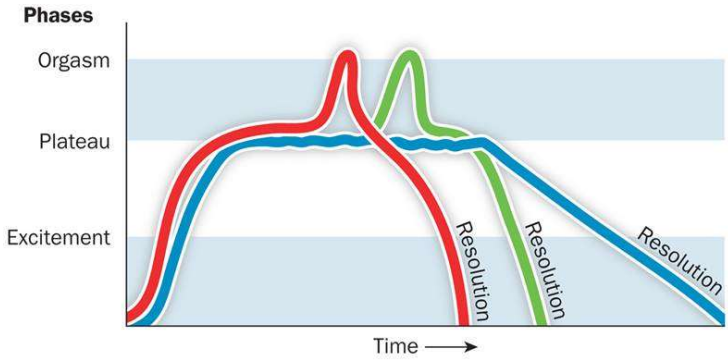
The Four-stage model: Masters and Johnson

The first model, proposed by Masters and Johnson in the mid-1960s, suggests a linear trajectory that is invariant for both males and females. It incorporates a 4-stage process:

- Excitement (psycho physiologic interest and arousal)
- Plateau (reflecting the peak of sexual arousal)
- Orgasm
- Resolution (when the body returns to an un stimulated state).



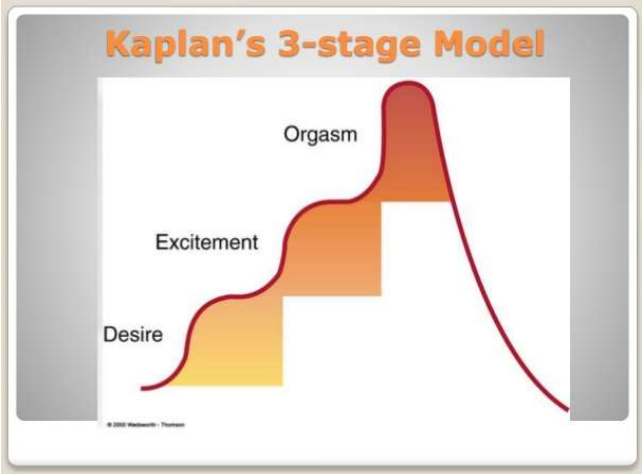
The Male Sexual Response Cycle



The Female Sexual Response Cycle

Kaplan model:

The second model, 1970 Kaplan's tripartite structure linear but emphasizes the importance of the cognitive aspect of desire in contrast to physiologic arousal.



Non Linear models:

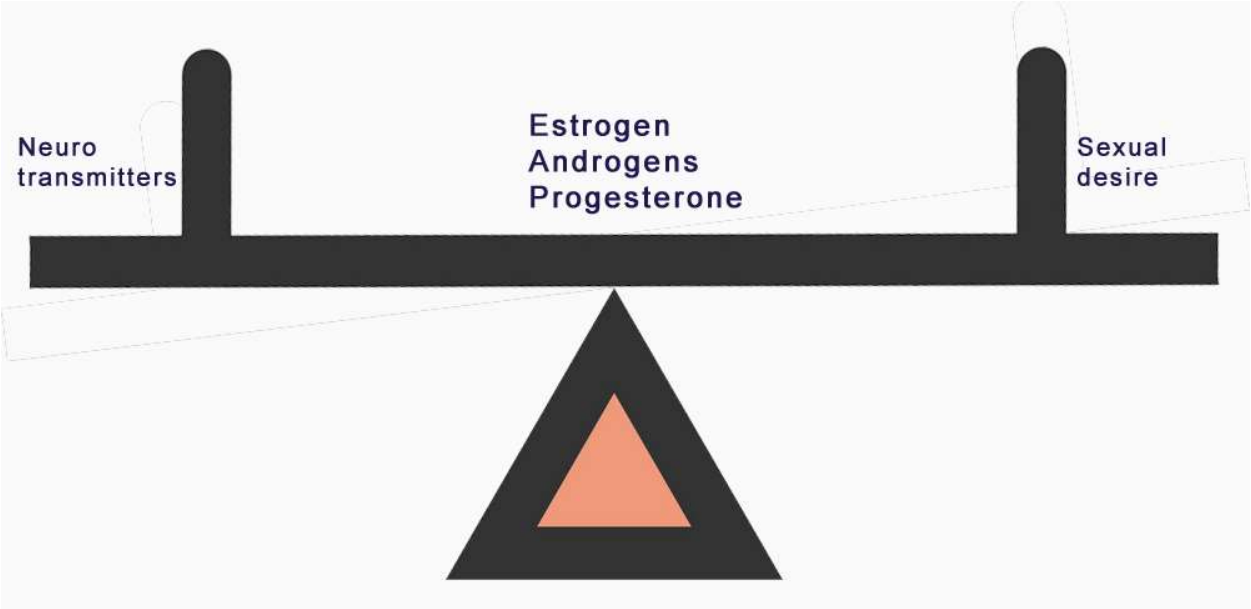
Basson Model :

The third model 1990s, Basson developed a nonlinear model of female sexual response that integrates.
Emotional intimacy, sexual stimuli, and relationship satisfaction and takes into account the many reasons women initiate or are receptive to a sexual encounter. Women may enter into sexual activity to increase emotional closeness and commitment, for example, without having had previous desire or thoughts about sexual activities. This decision leads to a willingness to focus on sexual stimulation that is processed in her mind and influenced by various biologic and psycho logic factors. Continued stimulation produces increased intensive sexual excitement that produces sexual desire.

How it happens?
An accurate diagnosis of HSDD is crucial to understand the potential causes and, eventually, to establish treatment strategies with drugs.

Current research suggests that neurotransmitters, strongly influenced by sex hormones (estrogen, androgens, and even progesterone), play a key role in modulating sexual desire.

- When an imbalance between the Dopaminergic system (which increases sexual desire and excitement).
- In addition, an overactive serotoninergic system can decrease desire and delay orgasm.
- Norepinephrine system (which affects arousal and orgasm) occurs, women may feel unable to begin the sexual response cycle.



Sexual excitation can be primed internally by

- Sex hormone actions or
- Externally by sexual incentives or
- Substances that activate excitatory neurochemical systems.
- Endogenous inhibitory mechanisms are tonically activated by situational variables, such as
    - Stress and fatigue, and/or
    - By compounds that reinforce inhibition (ie, selective serotonin reuptake inhibitors [SSRIs]) or,
    - Alternatively, sexual excitatory mechanisms are endogenously blunted, as it may occur in some hormonal and/or
    - Metabolic conditions, several amounts of FSD may be present and sexual symptoms may be co-occurring in the same woman.
- Psychorelational issues and sociocultural factors should always be ruled out.

Removal of ovaries:

The iatrogenic removal of both ovaries, which may occur well before the age of

natural menopause, is characterized by the effects of acute estrogen and androgen deprivation in several domains of sexual function (desire, arousal, lubrication, orgasm, satisfaction) and has been significantly associated with HSDD and severity of other menopausal symptoms such as vaginal dryness.

Following bilateral oophorectomy, both premenopausally and postmenopausally, there is a sudden 50% fall in circulating testosterone (T) levels which have been associated with the so called androgen insufficiency syndrome; an increasingly accepted clinical entity comprising specific symptoms such as low sexual desire, persistent and inexplicable fatigue, blunted motivation and a general reduced sense of wellbeing.

Hormonal Regulation:
When sexual desire and ovarian hormone levels were measured daily, estradiol was positively correlated with sexual desire, progesterone was associated with decreased sexual desire, and testosterone levels did not predict any aspect of women's sexual desire.

Ovarian corticosteroids may modulate women's sexual desire, their exact role in HSDD remains unclear:

- Postmenopausal women often experience lower levels of sexual desire but have lower rates of distress.
- Lower testosterone levels have been associated with decreased sexual desire. There is no level of testosterone that predicts HSDD.
- Low sexual desire is also associated with decreased estradiol levels, but women with HSDD do not necessarily have low estradiol levels.

Diagnosis of HSDD:
A thorough history to determine whether the root cause is neurobiological, interpersonal, psychosocial, or some combination of these.

Symptoms may also include distressing behavioral manifestations of a motivation, such as
(1) Reduced or absent initiation of sexual activity,
(2) Avoidance of situations that could lead to sexual activity (eg, going to bed after partner is asleep, restricting casual physical contact so as not to lead the partner to misperceive an interest in sex, etc), and
(3) Participation in sexual activity only out of obligation or fear of loss of partner.
Relationship issues may lead to low desire but should be addressed and excluded as the primary etiology before diagnosing generalized acquired HSDD.

The diagnosis of HSDD does not require complete loss of sexual desire but rather

a change for at least 3 months from what it was previously. Importantly, personal distress is a prerequisite for the diagnosis of HSDD. The distress may manifest as frustration, grief, incompetence, loss, sadness, sorrow, low self-esteem, confusion, or worry, but these should not be the cause of the diminished desire.

History/Screening:

Initial screening tools can facilitate the discussion of HSDD.

- The Decreased Sexual Desire Screener (Table 1), a 5-question instrument completed by the patient, was developed and validated for use by clinicians to aid in making the diagnosis of HSDD in premenopausal and postmenopausal women per the DSM-IV-TR and ISSWSH criteria.
- Women indicate yes/no responses to the 5 questions (Table 1).
- The purpose of questions 1 through 4 is to determine whether there is HSDD. If the patient responds yes to all the questions, this is consistent with generalized acquired HSDD. The purpose of question 5 is to help determine whether the etiology of HSDD is primary or secondary. In the case of secondary HSDD, it is important to treat the underlying cause.

TABLE 1. Decreased Sexual Desire Screener

1. In the past, was your level of sexual desire or interest good and satisfying to you?	O Yes	O No
2. Has there been a decrease in your level of sexual desire or interest?	O Yes	O No
3. Are you bothered by your decreased level of sexual desire or interest?	O Yes	O No
4. Would you like your level of sexual desire or interest to increase?	O Yes	O No
5. Please check all the factors that you feel may be contributing to your current decrease in sexual desire or interest:		
a. An operation, depression, injuries, or other medical conditions	O Yes	O No
b. Medications, drugs, or alcohol you are currently taking	O Yes	O No
c. Pregnancy, recent childbirth, menopausal symptoms	O Yes	O No
d. Other sexual issues you may be having (pain, decreased arousal, or orgasms)	O Yes	O No
e. Your partner's sexual problems	O Yes	O No
f. Dissatisfaction with your relationship or partner	O Yes	O No
g. Stress or fatigue	O Yes	O No

- If the patient answers *no* to any of the questions 1-4, then she does not qualify for the diagnosis of generalized acquired hypoactive sexual desire disorder (HSDD).
- If the patient answers *yes* to all of the questions 1-4, and your review confirms *no* answers to all of the factors in question 5, then she does qualify for the diagnosis of generalized acquired HSDD.
- If the patient answers "yes" to all of the questions 1-4 and "yes" to any of the factors in question 5, then decide whether the answers to question 5 indicate a primary diagnosis other than generalized acquired HSDD. Comorbid conditions such as arousal or orgasmic disorder do not rule out a concurrent diagnosis of HSDD.

Reprinted with permission from *J Sex Med*.[56]

Additional Evaluation/Testing:

(1) Thyroid hormone
(2) Prolactin levels

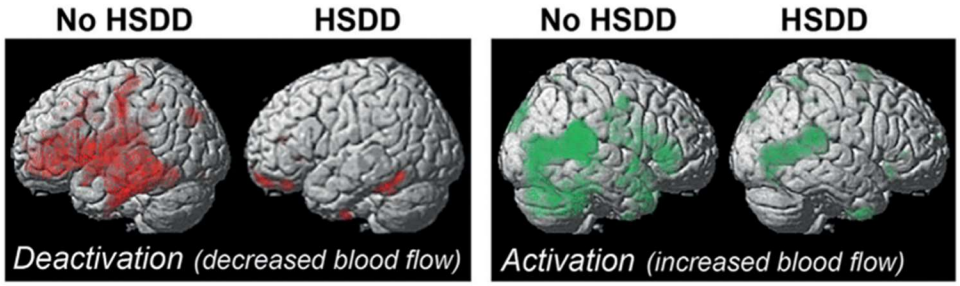
} To exclude an endocrine problem may be causing or contributing to low desire

(3) Testosterone and
(4) Sex hormone binding globulin levels

} Not required for the diagnosis of HSDD but are recommended if considering testosterone therapy

PET SCAN:

Changes in neural activity in response to viewing an erotic video in women with or without hypoactive sexual desire disorder (HSDD) assessed by positron emission tomography.



Decreased activation, observed primarily in the left hemisphere, is shown in red, and increased activation, observed primarily in the right hemisphere, is shown in green. Minimal deactivation was observed in the right hemisphere and minimal activation was observed in the left hemisphere.

Mandatory Diagnostics:

Medical History

- Assess mood disorders (depression and anxiety disorders).
- Explore Physical health. The presence of the chronic conditions listed in table and others may imply the problem is associated with a medical condition.
- Ask about prescription and over-the-counter medications.

Condition	Comments
Hyperthyrodism and hypothyrodism	No significant influence on desire, but may influence lubrication and orgasm
Urinary incontinence	Women with UI have significantly lower sexual desire
Diabetes	Has been associated with low desire, although it seems to be more related to depression and relationship problems of diabetic women
Hypertension	Not clear, but may produce low desire
Arthritis	May be due to chronic pain
Spinal cord injury, MS, neuromuscular disorders	Indirect influence on desire, mediated by other dysfunctions and pain
Parkinson's disease, dementia, schizophrenia	May result in low desire, but also increased desire

Sexual History

The type, frequency and severity of the problem need to be assessed. An example of questions is indicated:

- When did you notice that there was a problem?
- Has it been present since the beginning of your sexual life? (If lifelong,
- Psychosocial factors need to be investigated and hormonal only when clinically indicated; and also ask whether she was previously satisfied with her sexual life).
- Is the problem limited to a partner and/or to a specific situation?(if the problem is situational(e.g. she masturbates but low desire is present only with partner, or desire is present during holiday vacations),
- Check relationship and factors related to the specific situation:
- If generalized check biological factors and personal sexual issues such as trauma, conservative background).
- What is the average Frequency of sexual activity (alone and with partner) and how satisfactory is it?(if a Fairly regular frequency is reported and it is a satisfactory ,check what the woman considers normal in a stable relationship).
- Is your partner experiencing any sexual problems? If yes, since when is this case?
- Do you have erotic dreams, Sexual daydreams or sexual fantasies?(If yes, then motivations for sex should be checked; if no, then motivation and biological factors should be checked).
- Do you experience any other sexual problems such as vaginal dryness, difficulty in lubrication or orgasm difficulties, despite normal foreplay? Do you feel pain during intercourse? (if no, then a biological basis may be excluded, but if yes, the leading disorder needs to be identified).
- Determine the sexual context. Is there emotional intimacy? How useful are the sexual stimuli? How erotic is the context?

Psychosocial History:

- Ask about life stresses, such as child care, work/job stress.
- Ask about lifestyle patterns, especially adequate sleep.
- Assess relationship satisfaction and whether the woman feels free to communicate sexual issues with her partner.
- Also ask about her partner's sexual function.
- Ask how the couple copes with the problem. Pressure (imposed by the woman or her partner) may exacerbate symptoms).

Diagnostics when biological etiology is suspected:

Lab tests:

The possibility that laboratory testing will identify causes of sexual dysfunction is low.

- Estrogen deficiency is best detected by taking a history and performing a physical examination.
- Measurements of estradiol and follicle- stimulating hormone(FSH) are indicated in amenorrheic young women or in women with irregular menstrual patterns or to evaluate menopausal status
- In hysterectomized women without a clear symptom history.
- Although some interpret the “hypo” in HSDD to infer a biological deficiency of testoterone, the majority of studies have failed to find a correlation between low sexual desire and serum testoterone levels in women.
- Testoterone level measurements in women cannot be recommended until more accurate measures of androgenic activity emerge (Recommendation Grade B).In women with symptoms or signs of thyroid disease or hyper prolactinemia (galactorrhea,irregular menses and /or infertility)diagonistic assays should be taken.
- The same goes for conditions with a concrete failure of the hypopthalamao-Pituatory-gonadal(and adrenal)axis(ovarian cancer, chemotherapy For leukemia ,etc).

Psychophysiological Techniques:

Psychophysiological techniques, such as photoplethysmography, have been reserved largely for the research setting, and are not a standard component of the clinical assessment of treatment in women, due to part to their invasive nature.

Self-report measures:

The Female Sexual Function Index is currently the most often used measure. Diagnostic cut off scores were developed by means of sophisticated statistical procedures. The index has 19 items that assess six domains: desire ,subjective arousal, lubrication, orgasm, satisfaction and pain. It has sufficient Psychometric properties and is widely used.

Treatment of HSDD

Sexuality education:

A discussion of the impact of age and relationship duration on sexual drive as well as an explanation of the sexual response cycle and the contribution of triggers to sexual desire.

Hormonal Treatment

Testosterone Therapy:

Although the US Food and Drug Administration has not approved testosterone for this purpose, it is commonly prescribed off - label, despite recommendations against doing so by the American Endocrine Society (due to lack of long term safety data).

- Testosterones trials among estrogen-replete surgically and naturally menopausal women found that those women receiving the 300Ug/day patch reported an increase in sexually satisfying events of 1.9 per month Vs 0.9 events per month from placebo and a statistically significant increase in desire for sex.
- Testosterone patches have been approved only for use in surgically menopausal women in Europe.
- Testosterone has been found to be marginally effective for estrogen for estrogen- replete premenopausal women, though it produces supra physiological levels (spray90microL).
- The long-term risks of testosterone therapy on breast cancer, insulin resistance and metabolic syndrome are unknown, so a careful discussion with patients evaluating the potential hazards must take place before any testosterone supplementation is considered.
- Estrogen is required with testosterone administration, given that women with high endogenous testosterone-to-estrogen ratios have more cardiovascular disease and insulin resistance.

Tibolone:

This is an androgenic, Progestogenic and estrogenic synthetic hormone. This is evidence available showing that tibolone increases sexual desire and sexual fantasies However, a recent study Found that tibolone increases the risk of recurrence in breast cancer patient. It currently has no approval.

Non- Hormonal Treatment:

- In women with SSRI-associated mixed sexual symptoms, four weeks of treatment with the addition of bupropion led to a significant increase in self -reported feelings of desire and sexual activity, but no significant effect on sexual thoughts
- Centrally acting agent Flibanserin has shown positive results for HSDD and has been currently resubmitted to FDA for approval as treatment of HSDD in Premenopausal women.

Flibanserin:

- Flibanserin is currently the only FDA-approved treatment for generalized acquired HSDD in premenopausal women.
- non-hormonal, centrally acting, postsynaptic serotonin receptor agonist and a serotonin 2A receptor antagonist (a multifunctional serotonin agonist and antagonist) that results in a decrease in serotonin activity and an increase in dopamine and norepinephrine activity.
- Flibanserin, dosed at 100 mg at bedtime.
- common adverse events (AEs) in terms of placebo-corrected rates of

occurrence in premenopausal women were dizziness, somnolence, nausea and fatigue.
- Befits improves sexual desire.

Testosterone:

- Testosterone therapy is an evidence-based off-label treatment for perimenopausal and postmenopausal women with HSDD.
- Transdermal testosterone therapy using the 300-mg/d patch has been reported effective for the treatment of HSDD by multiple studies.
- In naturally and surgically menopausal women, testosterone therapy resulted in statistically significant.
- Treatment should not be continued beyond 6 months.

Bupropion:

- Bupropion, a norepinephrinedopamine reuptake inhibitor, is approved as an antidepressant and a treatment for smoking cessation, but it is used as an off-label treatment for HSDD.
- Bupropion sustained-release 150- to 400-mg daily dosing has been investigated in several clinical trials for the treatment of HSDD, improving sexual function as measured by the Changes in Sexual Functioning Questionnaire and the Brief Index of Sexual Functioning for Women.
- Although safety data for bupropion is not specifically available in women diagnosed as having HSDD, the most common AEs in terms of placebo-corrected rates of occurrence in placebo-controlled clinical trials for depression were tremor (13.5%), agitation (9.7%), dry mouth (9.2%), constipation (8.7%), excessive sweating (7.7%), dizziness (6.1%), and nausea/vomiting (4%). The AEs caused discontinuation of treatment in approximately 10% of 2400 patients and volunteers in clinical trials.

Buspirone:

- Buspirone, a serotonin 1A partial agonist, is approved as an anxiolytic for the management of generalized anxiety disorder or the short-term relief of symptoms of anxiety, and it is used as an off-label treatment for HSDD.
- When buspirone was co administered with selective serotonin reuptake inhibitors for the treatment of depression, a reduction in selective serotonin reuptake inhibitor induced sexual dysfunction was noted.
- Fifty-eight percent of individuals treated with buspirone reported an improvement in sexual function compared with 30% treated with placebo. Studies of treatment of HSDD have not been published.

Psychological Therapy Treatment of HSDD:

Brief office-based counseling may be helpful using the PLISSIT model (Permission, Limited Information, Specific Suggestions, and Intensive Therapy), a stepped approach specifically for general health care providers caring for women with sexual concerns. If psychotherapy is indicated, the patient should be referred to a sex therapist for management, including determination of the appropriate form of therapy for that patient or couple.

Cognitive and Motivational Aspects:

Psychotherapy is a recognized treatment strategy for HSDD, typically focused on

- Modifying thoughts,
- Beliefs,
- Behaviors,
- Emotions, and
- Relationship communication/behaviors that interferes with desire.

Cognitions typically addressed include negative thoughts, beliefs, expectations, cultural and religious standards, and attributions about sex, sexual activity, and altering/correcting other thoughts that inhibit sexual desire/lack of desire. Reactive sexual behaviors (or avoidance) maintain negative cognitions/emotional reactions, contributing to loss of desire. With modification of these behaviors to elicit positive emotional reactions and with positive reinforcement, the behaviors are more likely to be repeated and continued.

A woman with a desire discrepancy (less desire than her partner) may feel pressured and consequently perceive sex as a chore or, worse, aversive.

The treatment focuses on the dynamic interplay between the woman and her partner in their sexual relationship. Questions during the assessment may focus on how the woman/couple function cognitively, their sexual behavior and skills, communication of sexual needs, and sufficiency of sexual stimulation.

Sensate focus:

- Sensate focus therapy involves a graded series of non-demand sensual touching exercises.
- Typically used with couples, the objectives of sensate focus therapy are to reduce anxiety and avoidance of sensual touching or sexual activity, improve sexual communication between partners, and improve intimacy by reintroducing sexual activity in a gradual way.
- Exercises begin with non-genital touching and with successful achievement of each progressive series of exercises move to genital touching and, ultimately, penetrative sexual activity/intercourse or other genital sexual activity.
- Sensate focus may be more helpful in a subgroup of women with HSDD secondary to penetration-related anxiety and associated behavioral avoidance.

Cognitive Behavior Therapy:

- Cognitive behavior therapy (CBT) focuses on altering thoughts and behaviors that distract or result in inhibiting (or non-exciting) sexual thoughts in a sexual situation with specific focus on automatic thoughts and beliefs that may inhibit sexual desire (cognitive component).
- The behavioral component of therapy serves to change sexual behavior by focusing on pleasure and not on sexual form and planned sexual activity and self- exploration instead of avoidance of sexual activity.
- An important part of the CBT approach is education that may help the woman and her partner understand the physiology and psychology of sexual desire and change the perception of what is desire and sex.

.

Mindfulness:

- The goal of mindfulness-based cognitive therapy is to encourage participants to connect and engage with their sexuality by learning and practicing a variety of mindfulness exercises that attempt to improve awareness of the here and now and acceptance and self-compassion.
- Therapy also includes an educational component regarding female sexuality and sexual function. Session content may include helping women discover the ways in which sexual interest and motivation are influenced by thoughts, feelings, behaviors, and relationships. Another goal is to improve awareness and, thus, alter the effect of sexual function on mood and self-esteem.

The paucity of clinical trials and lack of adequate controls in the published studies that evaluate the efficacy of psychotherapeutic treatments of HSDD makes it difficult to draw any useful conclusions at this time.

Conclusion: Hypoactive sexual desire disorder in women is an important female sexual dysfunction that has been well-characterized for more than 3 decades.Based on con, the pathogenesis of HSDD is attributed to an imbalance in central sexual excitatory (dopamine, norepinephrine, melanocortin, and oxytocin) and sexual inhibitory (serotonin, opioid, endocannabinoid, and prolactin) pathways. Epidemiologic studies have identified multiple contributing factors, such as psychological conditions, relationship concerns, medical conditions, medications, and menopause. The diagnosis and management should be done with proper clinical approach.

THE ALGORITHYM OF HSDD MANAGEMENT