Female Sexual Dysfunction

Overview

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14/08/2024

Female Sexual Dysfunction (FSD) Nomenclature

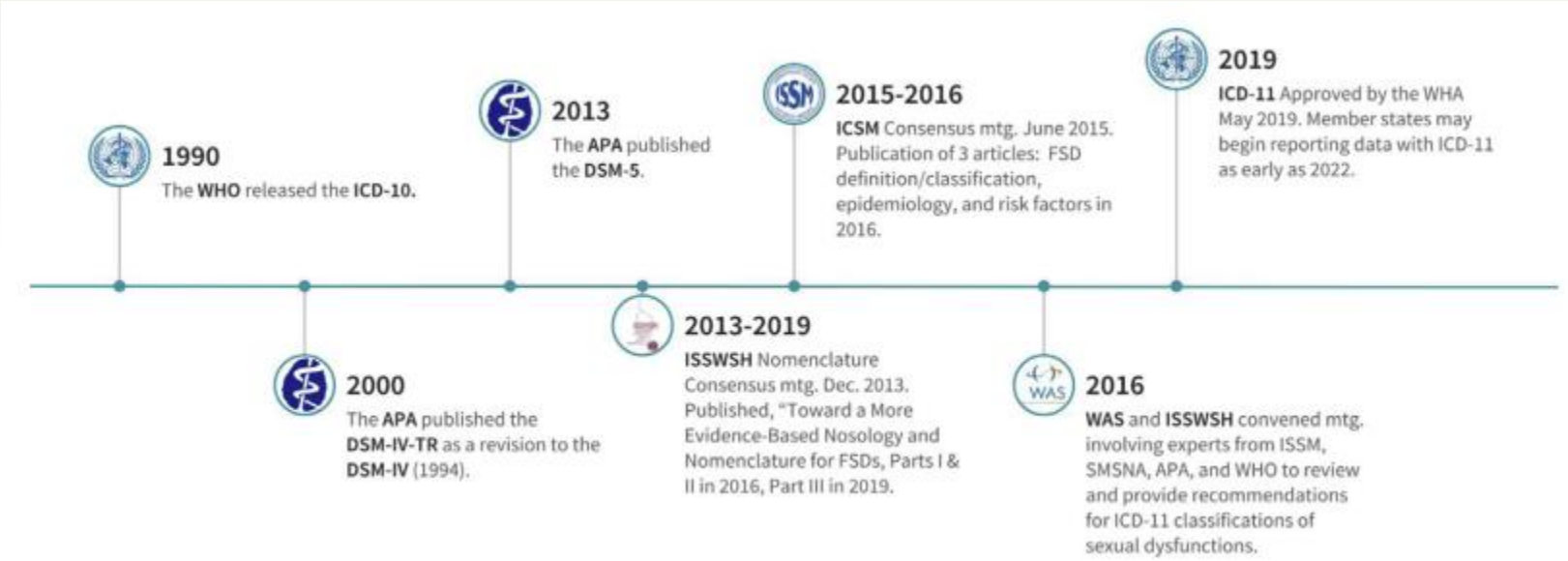


Figure 1. Timeline of female sexual dysfunction definitions, nomenclature, and classifications.

APA American Psychiatric Association; DSM-IV-TR Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision; ICD International Classification of Diseases and Statistics; ICSM International Consultation in Sexual Medicine; ISSWSH International Society for the Study of Women's Sexual Health; WAS World Association of Sexual Health; WHO World Health Organization.

Definition

Table 1. Comparison of DSM-IV-TR and DSM-5 female sexual dysfunctions

DSM-IV-TR	DSM-5
Female sexual dysfunctions	Female sexual dysfunctions
Hypoactive sexual desire disorder* (HSSD)	Female sexual interest/arousal disorder (FSIAD)
Female sexual arousal disorder	Female sexual interest/arousal disorder
Female orgasmic disorder	Female orgasmic disorder†
Dyspareunia (not due to a general medical condition)	Genito-pelvic pain/penetration disorder
Vaginismus (not due to a general medical condition)	Genito-pelvic pain/penetration disorder
Other sexual dysfunctions*	Other sexual dysfunctions*
Sexual aversion disorder*	Removed
Sexual dysfunction due to a general medical condition*	Removed
Substance/medication-induced sexual dysfunction*	Substance/medication-induced sexual dysfunction*,†
Sexual dysfunction not otherwise specified*	Other specified sexual dysfunction*
	Unspecified sexual dysfunction*

Definition

- Sexual dysfunction is defined as a sexual problem that is **persistent or recurrent** and causes **marked personal distress or interpersonal difficulty**. It must not be better accounted for by a medical or psychiatric condition (ie, anxiety and depression) or due exclusively to the direct physiologic effects of a substance or medication.
- Most symptoms should last at least 6 months and occur at least in 75% of sexual experiences in order to formulate a diagnosis of FSD.

- Intervention is warranted when a patient presents with a **distressing sexual concern**, even if it does not strictly meet DSM-5 criteria.

Epidemiology

- Sexual problems are reported by approximately 40 percent of females worldwide, and approximately **12 percent** (one in every eight females) have a sexual problem associated with personal or interpersonal **distress**.
- The prevalence rate of HSDD in Iranian women in the general population was 35% (95% CI: 17.6-52.1%). Sexual Orgasm Disorder represents same value.

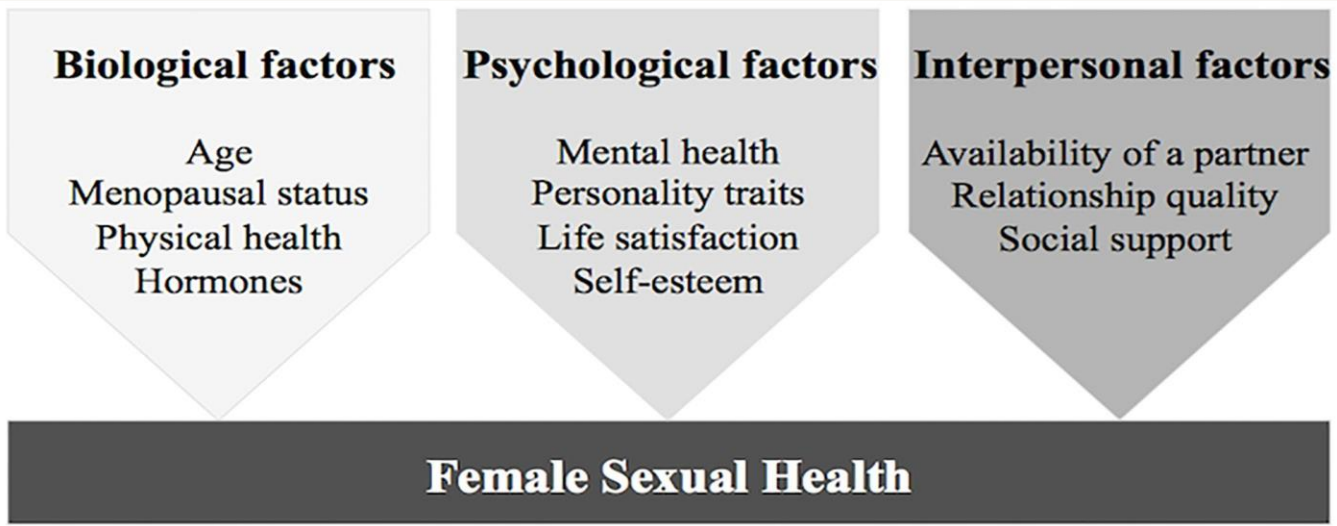
1. Shifren JL, Monz BU, Russo PA, et al. Sexual problems and distress in United States women: prevalence and correlates. Obstet Gynecol 2008; 112:970.
2. Ramezani MA, Ahmadi K, Ghaemmaghami A, Marzabadi EA, Pardakhti F. Epidemiology of Sexual Dysfunction in Iran: A Systematic Review and Meta-analysis. Int J Prev Med. 2015 May 20;6:43.

Impact of FSD

- FSD is underdiagnosed and undertreated, partly because patients are not likely to discuss it.
- There is a unique interrelation between sexual dysfunction and infertility in that sexual dysfunction can be a cause and a consequence of infertility.
- FSD has a negative impact on women's quality of life, self-esteem, and physical health.
- Sexual problems are the cause of divorce in 67.4% of women and 60% of men[1].

1. Daneshfar F, etal. Sexual dysfunction and divorce in Iran: A systematic review. J Family Med Prim Care. 2023 Mar;12(3):430-439. doi: 10.4103/jfmpc.jfmpc_991_22. Epub 2023 Mar 17.

Sexual Medicine: a multidisciplinary field



Etiologic Components

- Sexual response is regulated by sex hormones, such as testosterone and estrogen, and by several neurotransmitter systems.
- Results of a study showed a direct association between a low level of endogenous DHEAS with low sexual desire, arousal, and responsiveness.

- Serotonin: a key inhibitory modulator of sexual desire.
- Activating 5-HT1A receptors and/or blocking 5-HT2A receptors in the prefrontal cortex activates dopamine neurons.

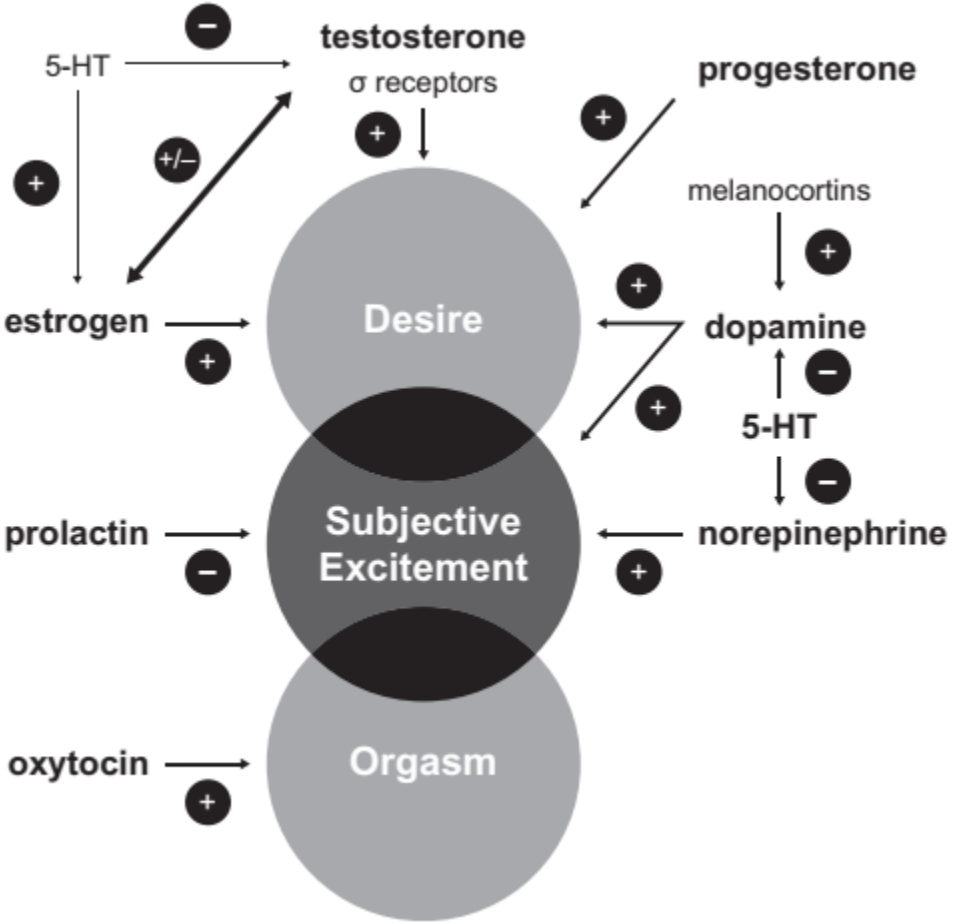


Figure 2. Central effects on sexual function. +:excitatory effect; -: inhibitory effect; 5-HT: serotonin.

Hormonal Factors

- **Menopause:** Low libido, decreased lubrication, and vaginal dryness contributing to dyspareunia, anorgasmia.

The decision to institute any hormonal therapy must be individualized and the patient adequately informed about risks and benefits.

- **Contraceptives:** OCPs reduce ovarian testosterone production via suppression of pituitary luteinizing hormone secretion.

The largest study; **No effect** on desire was found.

1. Davis SR, etal. Circulating androgen levels and self-reported sexual function in women. JAMA 2005; 294: 91–96
2. Boozalis A, etal. Sexual Desire and Hormonal Contraception. Obstet Gynecol 2016; 127:563.

Psychological factors

- **Depression** is strongly linked to reduced sexual desire, with up to 80% of women reporting this symptom. This reduction in desire is often linked to the general anhedonia associated with depression.

- **Anxiety disorders** are also linked to sexual pain, with a prevalence rate that is ten times higher compared to women without anxiety disorders.

Antidepressants

Table 2. Mechanisms of action and risk of antidepressant induced sexual dysfunction.

Drug	Main relevant mechanisms	AISD risk	Comments
SSRIs[a,b]	block 5HT reuptake	High	meta-analyses: risk similar
SNRIs[c]	block 5HT reuptake, noradrenergic	Medium	desvenlafaxine & duloxetine ? lower risk
MAOIs[d]	dopaminergic, noradrenergic but serotoninergic	Medium	Td selegiline ? low risk
Quetiapine[e]	antagonizes D1, D2, 5HT2, 5HT1A	Medium	? < than schizophrenia dosage
Mirtazapine[f]	noradrenergic, serotoninergic but blocks 5HT2, dopaminergic	Low	Weight gain issue
Bupropion[g]	dopaminergic, noradrenergic	Very low	
Trazadone[h]	5HT2A/5HT2 C antagonism, weakly blocks 5HT reuptake	Very low	
Meclobamide[i]	reversible MAOI	Very low	
Vilazadone[j]	SSRI plus HT1A partial agonist	Negligible	More study needed
Vortioxetine[k]	"multimodal": inhibits serotonin transporter, agonist 5HT1A	Negligible	More study needed
Aripiprazole[l]	partial agonist D2, 5HT1A, antagonist 5HT2A, spares prolactin	Negligible	More study needed
Lithium[m]	unclear	Medium	More study needed

AISD: antidepressant induced sexual dysfunction; MAOI: monoamine oxidase inhibitor; SNRI: serotonin-norepinephrine reuptake inhibitor; SSRI: selective serotonin reuptake inhibitor.

Selective serotonin reuptake inhibitors (SSRIs)

- Sexual dysfunction is common with its rate ranges from 25.8% to 80.3%.

Management:

- **Drug adaption:** For some 10% sexual side effects may lessen with time.
- **Dose reduction:** Sexual dysfunction may be a dose-related adverse event.
- **Switching:** to medications with fewer sexual side effects, such as bupropion or desvenlafaxine.
- **Adjunct treatment:** Adding bupropion or aripiprazole.
- **Cognitive behavioral therapy & Acute exercise:** There is some evidence.

Monoamine oxidase inhibitors (MAOIs)

- **MAOIs** have interfered with female orgasmic capacity. A study conducted on women who were prescribed MAOIs revealed that after 16 to 18 weeks of treatment, the adverse effect disappeared.
- **Phenelzine:** Decreased sexual activity.
- **Tranylcypromine:** Paradoxical sexually stimulating effect in some persons.
- **Moclobemide:** Improvement of reduced libido.

Antipsychotics

- Women with psychosis, who may require lifelong antipsychotic treatment, often experience significant sexual dysfunction.
- Pathophysiology: Dopamine blockade and a combination of the effects on prolactin, serotonin, acetylcholine and histamine.
- Non-pharmacologic strategies are crucial for managing these persistent side effects.
- Pharmacologic options include dose reduction or switching to more sexually neutral antipsychotics like quetiapine or aripiprazole.

Cigarette smoking

Smoking is an independent risk factor for FSD. Smokers are 48% more susceptible to the FSD.

- Smoking can inhibit ovarian function and has an anti-estrogenic effect.
- Vasoconstrictive effect of cigarette smoke components, resulting in stiffness of genital vessel in long term smokers.
- Decreased nitric oxide level, enhanced β-adrenergic receptor formation and increased anticholinergic effect are also responsible for the impaired genital blood flow, decrease of vaginal lubrication and frequency of sexual intercourse.
- The rate of FSD was significantly decreased after nine months of smoking cessation in one study.

Substance Use

- **Alcohol and opioid** use disorders can lead to a **hypogonadotropic** state and impaired sexual function.
- Alcohol can produce a slight rise in testosterone levels in women. The latter finding may account for women reporting increased libido after drinking small amounts of alcohol.
- Alcohol chronic consumption can increase the likelihood of sexual dysfunction in women by 74%. The most common forms of FSD are dyspareunia, reduced vaginal lubrication, and difficulties with sexual arousal.
- Substance use disorders frequently correlate with poor mental and physical health, disrupted relationships, and financial instability, all of which negatively impact sexual function.
- Therapy may be necessary for patients **recovering from substance dependency** to regain sexual function.

Hypertension

The prevalence of FSD appeared to be higher in hypertensive women; especially in terms of difficulty with desire, arousal, and pain.

- **Beta-blockers** significantly negatively affected female sexual function in some studies.
- FSD was diagnosed more in **thiazide-treated** hypertensive women in one study.
- **ARBs** improve female sexual function in some studies.

Zhong Q, Anderson Y. Management of Hypertension with Female Sexual Dysfunction. Medicina (Kaunas). 2022 May 5;58(5):637. doi: 10.3390/medicina58050637. PMID: 35630054; PMCID: PMC9143081.

Thyroid Disease

Hypothyroidism and hyperthyroidism have been reported to impair libido in men and women.

- Impairments in desire, arousal/lubrication, orgasm, satisfaction, and pain during intercourse.
- Thyroid disorders exert effects on circulating sex hormone levels through peripheral and central pathways and can indirectly provoke psychiatric and autonomic dysregulation that can impair sexual function.

Correction to **euthyroid** state was associated with dramatic resolution of sexual dysfunction.


Thank you