

Prevalence and evaluation of sexual health problems HSDD in Europe

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Abstract

The complex condition of the menopause is experienced by all women going through the physical and emotional changes associated with ovarian sexual hormones loss. It impacts directly on their physical and mental health. The complexity of this condition makes it necessary to accumulate large bodies of data to define the patterns and trends in its evaluable manifestations.

To this end, large amounts of data were collected on women from France, Germany, Italy and the UK, via the Women's International Survey on Health and Sexuality. The survey yielded 2467 responders aged between 20 and 70, capturing women with surgical and natural menopausal status and those with premenopausal status. The key measures within the survey were the Profile of Female of Sexual Function[®] (PFSF[®]) and the Personal Distress Scale[®] (PDS[®]).

In the four EU countries studied, sexual activity decreases by age. An increase in FSD, particularly loss of sexual desire, is directly correlated with increasing age; however, the distress associated with loss of sexual desire is inversely correlated with age. Cultural and context dependent factors modulate the percentage of any female sexual dysfunction (FSD) in the different European countries, leading to significant differences particularly in the percentage of low desire in women aged 20-49. However, surgical menopause blunts most of the country related differences in the perception of loss of sexual desire.

The findings of this survey have implications for the understanding of HSDD, not only the way it should be assessed in clinical practice, but also the most appropriate means for its treatment. Testosterone deficiency is a significant cause of HSDD, and new therapies have been investigated which offer considerable potential to address this hormonal aetiology.

Keywords

Hypoactive sexual desire disorder; Menopause; Profile of Female of Sexual Function[®] (PFSF[®]); Personal Distress Scale[®] (PDS[®]); Testosterone deficiency

Introduction

In healthy women, the mean age for the onset of menopause is 51 years. This point in the reproductive life of a woman is characterised by numerous biological, psychosexual and health related changes. They may impact on the woman's body image, self perception, self-confidence and self-esteem, on her sense of well-being and perception of vital energy, and impinge on couple and family relationships.

The complexity of female sexual functioning necessitates the accumulation of large bodies of data to allow the testing of hypotheses and the formulation of more theories. A significant element of the broad picture is the extent to which sociocultural issues influence female sexual function across the lifespan and particularly during the menopause. Obtaining information on the prevalence of sexual health problems in a selection of countries would aid the dissection of this complex subject. To this end, a European survey of women's sexual function and dysfunction was conducted in France, Germany, Italy and the UK.

The Women's International Survey on Health and Sexuality

The data for the Women's International Survey on Health & Sexuality¹ was collected via mail and in person via random door-to-door contacts and supported by Procter and Gamble Pharmaceuticals. Participants involved in the study were all volunteers from four national databases willing to be contacted to participate in surveys¹. To be eligible for inclusion in the survey the potential participants had to be women from UK, France, Germany and Italy, aged 20-70 yrs and literate in the language of the country they lived in¹. Women were also recruited by reproductive status to achieve a sample size of at least 100 women of seven groups classified by reproductive phase: (i) younger surgical menopause (hysterectomy with bilateral oophorectomy) women, aged 20-49; (ii) older surgical menopause (hysterectomy with bilateral oophorectomy) women, aged 50-70; (iii) regularly menstruating (premenopausal) women aged 20-49; (iv) perimenopausal women, menstruating irregularly and aged 36-49; (v) naturally postmenopausal women, no menses for 12 months, aged 50-70; (vi) hysterectomized women without oophorectomy, aged 20-49; and (vii) hysterectomized women without oophorectomy, aged 50-70. Purposefully, a surplus of women was recruited to offset the anticipated response failures.

The response rate of women who self-completed the questionnaire and returned it was 65%, totalling 2467 subjects¹. The key measures within the survey were the frequency of sexual activity, satisfaction with partner relationship and sex life, the Profile of Female Sexual Function (PFSF) and the Personal Distress Scale (PDS), two validated questionnaires specifically designed to describe both the individual sexual experience in its different dimensions (sexual desire, arousal, orgasm, sexual self-image etc) and the level of distress women may experience when they experiences low sexual desire.

The results of the survey described interesting variation in female sexual functioning among the four European countries in n=1356 women who met the analysis criteria. The data also allowed the proportion of women to be revealed in each surveyed country reporting sexual dysfunction and the level of distress associated with decreased interest in sex.

Reviewing the results of the Women's International Survey on Health and Sexuality

Sexual activity

In all the 4 countries from which data was collected the frequency of sexual intercourse declined with age. In the 46-60 years age group, around 9 events of sexual intercourse per 30day period were reported by the four nationalities. In the 61-70 years age group this frequency of sexual intercourse had declined to less than 5 activities per 30day period, a low of 2 events in Italy and a high of 6 in France.

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The above could also be shown for the frequency of orgasm by age group and country, and also showed that all types of sexual activity, except masturbation, declined with age, regardless of nationality (**Figure 1**).

From sexual function to dysfunction with a cultural and age related perspective

In the four countries, the lowest proportion of women reporting low desire was recorded in France (11%); the highest proportion in Germany. Low arousal was similar across the countries as was orgasm, but UK and German women reported the greatest incidences of low sexual desire, between 34-36% (**Table 1**)

1 in 4 to 1 in 5 women aged 20-45 years from Germany and UK do present with low sexual desire, between 46 to 60 years this rate increases in both countries to more than one in 3 women. In the oldest age group (61 to 70 years), between 47 and 81% of women from Germany, Italy and UK present with low sexual desire.

Low arousal is reported by about 1 in 3 women aged 46 to 60 years in all the countries. This rate increases in UK and Italy to 1 in 2 women aged 61 to 70 years (**Table 2**).

Separating the nationalities into the three age classes shows that in the youngest age group, similar proportions in the four countries have orgasmic difficulties. In the 46–60 years and the oldest age group, the highest proportion of women reporting difficulties reaching climax were Italian. The latter data probably mirrors both the low rate of HT among Italian women (currently as low as 5,3%) and, for the older cohort, the long lasting effect of a pre-second world war strictly catholic education when sex for only meant for reproductive reasons, and therefore mostly limited to the fertile age.

With the onset of the menopause, the walls of the vagina thin and less lubricating fluids are secreted from the mucus membranes, both of which may contribute to pain during sexual intercourse (dyspareunia). The study among European women from France, Germany, UK and Italy showed that this problem does occur in premenopausal women as well and it increases in frequency with the onset of menopause, both natural or surgically induced. Obviously, this is frequently associated with feelings of distress, which are more prevalent among those women aged between 20 and 49 years of age, who undergo a surgically induced menopause. Many of these women are young and feel they should still be sexually active: however, bilateral oophorectomy and the consequent variable loss of sexual desire leave them with a complex cluster of negative feeling and emotions.

Women's sexual interest/desire disorder

Women's sexual interest/desire disorder can be best described as absent or diminished feelings of sexual interest or desire, absent sexual thoughts or fantasies and a lack of responsive desire. Also, the disorder can be associated with motivational issues, where the reasons and incentives to become sexually aroused are scarce or absent and/or sexual drive may be scarce or absent^{2,3}. The lack of interest is considered to be beyond a normative lessening associated with life cycle and relationship duration. Low sexual desire becomes clinically relevant, i.e. is defined as hypoactive sexual desire disorder, when it causes distress to the patient.

In those women with low sexual desire, there is considerable variation between age and menopausal status. Naturally, low sexual desire is least prevalent in premenopausal women between 20 and 49 years of age. In those women of the same age group but with a surgical menopause, low sexual desire is considerably increased to 1 in 3 women and is higher still in those

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women with a surgical menopause. The incidence of low sexual desire in the 50–70 years age group, both among those women with a natural menopause and a surgically induced is very similar, reaching nearly 50%. The women who were most distressed by low sexual desire were those who perceived themselves to be most different from the normative state, i.e. the younger individuals in premenopausal and surgical menopausal states. Age and the probability of experiencing low sexual desire are positively correlated, but age and the probability of being distressed due to decreased desire are negatively correlated. The correlation between age and the probability of having hypoactive sexual desire disorder is only slightly positive (**Figure 2**).

Premenopausal women in France and Italy reported lower incidences of low sexual desire, compared to those women in Germany and the UK. Thus, when sexual hormones are in play, cultural differences may induce a significant variability in the reported percentage of low desire among women of different countries. However, in the context of a surgical menopause, cultural differences become less relevant. Regardless of nationality, around 40% of these women experience low sexual desire. In women with natural menopause, the highest rates of low sexual desire were reported by German women (59%) followed by English women (**Table 3**).

Hypoactive sexual desire disorder has considerable effects on the emotional and psychological states of the affected women. A greater percentage of women affected by HSDD will complain of different psychological consequences: a) personal feelings of concern, unhappiness, frustration, anger and even shame, as if there was a personal responsibility and blame in their loss of sexual desire; b) feeling less feminine, with a major body-image impact ; c) concerned because they were “letting their partner down”¹ (**Figure 3**). Loss of desire may therefore affect personal feelings, contributing to mood disorders, sexual identity, wounding their body image, and the couple relationship. Modulation of the psychological state will impinge directly on the sexual or marital/relationship satisfaction⁴. Mood modifications may be rooted not only on “psychological” negative affects, but also on the important down-regulation of the serotonergic system (the leading mood-modulator) secondary to the loss of ovarian hormones and parallel significant reduction of endorphins.

The body of literature that relates to the menopausal transition provides evidence which points to the incremental effect of the natural menopause over age for most domains of sexual functioning⁵. Also, current data supports the theory that the iatrogenic menopause contributes directly to female sexual dysfunction⁶. The detrimental effect of age on sexual desire is amplified if the menopause comes at an earlier age and if it is iatrogenic, for the cumulative effect of the sudden loss of estrogens and androgens.

From prevalence to clinical assessment

When assessing a patient for female sexual dysfunction the clinicians should focus on two sets of factors. Firstly, what is the biological and psychosexual aetiology of the condition? Secondly, the clinician should consider the relation and context-dependent factors, which must be assessed with great care to appreciate the natural history of the disorder, with assessment of: a) the predisposing factors, the most neglected; b) the precipitating (the one which captures the clinician’s attention) and c) of the maintaining factors. The most important of these maintaining factors is the diagnostic omission by physicians; therefore clinicians must appreciate their contribution to the perpetuation of the condition because they don’t recognise the maintaining factors or the predisposing and precipitating biological factors contributing to the problem.

Female sexual function is a complex, multifaceted condition and is best explained to beginners by using a flow diagram. Firstly, sexual desire interacts with and partially overlaps mental arousal. These two separate channels converge leading to genital arousal and receptiveness. Genital

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arousal acts through some manner of positive feedback, increasing the sexual desire and mental arousal. Good genital blood flow and genital arousal are fundamental in facilitating an orgasm. The phenomenon of orgasm feeds into another facet of the network. After orgasm, changes and feelings can be divided into physiological return to basal state (resolution) and emotional (satisfaction) elements. When everything is functioning normally, positive feedback results, but when there is a problem in just one – or more – of the stages, negative feedback can result (**Figure 4**). A schematic of female sexual dysfunction also helps us to understand the comorbidity of the disorder that is so often encountered in clinical practice and reported in the data. Comorbidity is a keyword in the understanding the female sexual dysfunction. Comorbidity is present in three domains. Firstly, overlap within the different female sexual dysfunctions: desire, arousal, orgasmic and sexual pain disorder often overlap. Secondly, FSD can also develop as a result of numerous medical conditions. For example, when women experience dyspareunia they have an odds ratio of 7.61 of also experiencing lower urinary tract symptoms. This relationship is often overlooked by the clinician. Thirdly, psychological factors, such as body image disorders can also impinge directly on FSD.

Brotto et Al. has developed a schematic for an understanding of the complexity of women's sexual dysfunctions ⁷. The model, in the form of a Venn diagram shows sexual desire, arousal, orgasm and vaginismic difficulties and pain during or after intercourse overlapping. For each individual case of female sexual dysfunction, the contribution of each of these sectors may vary, depending on individual personal and clinical history, and life circumstances.

Although these schematics may simplify the understanding of FSD, the question stands as to how HSDD can be quickly assessed in the consulting room setting, as time is a limiting factor for every clinician. A good general question to begin with is to inquire about the patient's general physical and mental well-being. Are there symptoms? Is any medication being taken? This latter question is important as many types of medication can have a negative affect on sexual desire. Qualitative question can include: are you currently sexually active? If the answer to this is no, the patient should be asked if she is concerned by the lack of activity. If the answer is yes, then the patient can quizzed about her sex life.

To further assess HSDD, the patient should also be asked whether she has always suffered from low sexual desire ("lifelong") or has it faded recently ("acquired")? It is also very pertinent to consider other potential comorbidities: Does the patient experience vaginal dryness? Does the patient have difficulty in getting aroused or lubricated? Does the patient have difficulty reaching orgasm? Does the patient feel pain during or after intercourse?

The relationship is another part of the comorbidity puzzle and to obtain the answers the patient can be asked a selection of questions, such as: Do you have a stable relationship? How is your relationship? Are you satisfied with it? How is your partner's health (general and sexual)? Of course, these questions are simple examples, but the patient can be asked many more so that an accurate and detailed picture of her sexual health can be constructed.

Obviously, during an assessment each disorder should be specified as lifelong or acquired, generalized or situational. The aetiology should also be considered and categorised as biological, psychogenic, mixed or unknown ^{2;3;8;9}. The level of distress is also important, but it has two major lines of development. One of these threads of distress is related to that which they feel due to their own sexual dysfunction, while the second is more "altruistic" due to the distress they believe to be causing their partner. Often, the altruistic distress is more powerful than the personal distress. ^{1;10} Distress can be assessed with validation scales, such as the female sexual distress scale¹¹ and the personal distress scale (Procter & Gamble, 2004). Most simply, the patient can be asked during consultation whether she perceives her problems as very distressing, mildly distressing or not distressing at all.

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Once the patient has been assessed, the physician can look towards the prognosis. How do we address acquired hypoactive sexual desire disorder? A treatment algorithm allows the physician to consider a treatment when we know the patient still has high motivation, but low sexual drive (Figure 5) ¹¹. A perfect example of this would be a woman with a bilateral ovariectomy. The decline in circulating androgens will have a detrimental effect on her libido and an assay of her hormone levels will show if this is the case. Administering androgens will rectify the situation. However, if the outcome of the assessment is a yellow light in the algorithm, the prognosis is more complex as it is a matter of motivation (**Figure 5**). In this case the quality of the intimacy and state of the relationship need to be examined. Hormone treatment would not be appropriate in this situation. When the assessment leads to a red light in the algorithm, this is the most complex prognosis of all and we are now in the realm of comorbidity with depression, which is a complex condition and difficult to treat.

In conclusion, the standard psychosexual assessment in HSDD is clinical history and questionnaires; however, no standardised methodology exists for an assessment. This lack of a standardised approach is associated with certain risks. The clinical history may be perceived more in the psychological plane by the psychologically minded and more in the biological plane by the medically orientated, which may result in certain areas being omitted.

With respect to the medical assessment of hypoactive sexual desire disorder, what is the standard protocol? Is it the plasma levels of free testosterone? Unfortunately, the reality is quite far removed from the ideal. Again, international standardisation is lacking. Measurements and assays vary from country to country and from laboratory to laboratory and the actual meaning of plasma hormone levels is a contentious subject, as the receptor activity and number facilitate the action of the hormones in different ways depending on gender and the individual. Investigational studies of hormone levels will also allow the physician to consider the possibility of premature menopause, which could explain the observations they are recording. Also, it is often the case that the effect of the body, particularly the quality of genital response (congestion and lubrication) and pleasure the women experience during sex in influencing the feelings of sexual desire are rarely considered. The contribution of the genitals status (vulvar and vaginal trophism, tonus of the pelvic floor, presence of vaginitis, vulvitis, and/or vulvar vestibulitis) to HSDD is a subject that surely warrants further research.

Discussion

In the four EU countries studied, sexual activity decreases by age. An increase in FSD, particularly loss of sexual desire, is directly correlated with increasing age; however, the distress associated with loss of sexual desire is inversely correlated with age. Cultural and context dependent factors modulate the percentage of any female sexual dysfunction (FSD) in the different European countries. However, surgical menopause blunts most of the country related differences in the perception of loss of sexual desire.

To conclude, low sexual desire with associated distress (HSDD) is the most frequent FSD in European women. It increases with age. Those women who undergo a bilateral ovariectomy have a significantly higher prevalence of HSDD especially those women around the younger age group between 20-49 years. HSDD may impact on the women's personal happiness and relationships with their partner. The condition should be assessed with awareness of its frequent psychosexual and medical comorbidities. The clinical evaluation should not be limited to a careful clinical history and questionnaires, but also include a thorough physical examination with special attention to the genital health, and appropriate laboratory tests.

One risk with emerging treatments for HSDD, such as testosterone replacement patches is that they may be seen as a panacea for what is a very complex condition with multiple contributing factors and comorbidities that need to be diagnosed and addressed in the individual woman. However, in many cases with a major etiological factor – i.e. loss of ovarian testosterone- a simple treatment such as low dose transdermal testosterone may relieve the distress caused by HSDD, as proven in many RCT (Simon, et Al; Shifren et Al etc).

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Table 1.

Proportion of women with FSD by country - % lows in desire, arousal, pleasure and orgasm.

% Low in:	France	Italy	Germany	Uk
Desire	21	28*	36**	34*
Arousal	23	22	20	24
Pleasure	23	31*	32*	34*
Orgasm	20	18	21	18

*p<0.05 vs. France

**p<0.05 vs. Italy & France

Table 2.

Proportion of women with FSD by country - % of age groups with low sexual desire.

Age	20-45 yrs	46-60 yrs	61-70 yrs
France	11	27*	39*
Italy	14	32*	81**
Germany	20	41*	66*
UK	24	37*	47*

*p<0.05 vs. 20-45 yrs old

**p<0.05 vs. 46-60 yrs old and vs France

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Table 3.

Percentage of women classified with low desire by country and by menopausal status.

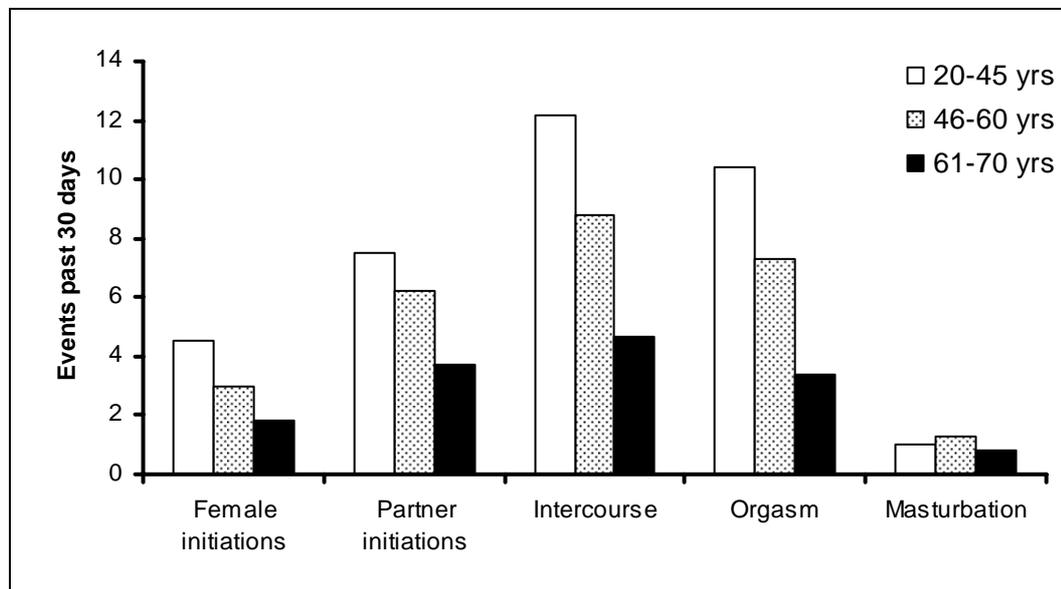
	Pre- Menopause	Surgical Menopause	Natural Menopause
France	11*	39	26
Italy	12*	44	42
Germany	19*	43	59
UK	22*	35	48**

*p<0.05 vs. SM and NM women

**p<0.05 vs. SM women Base: women with sexual partners

Figure 1.

Summary of sexual activity by age – all countries.



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Figure 2.

Probability of experiencing low desire, associated distress or HSDD, in the life-span (N=2467 women, aged 20-70, in 4 European Countries).

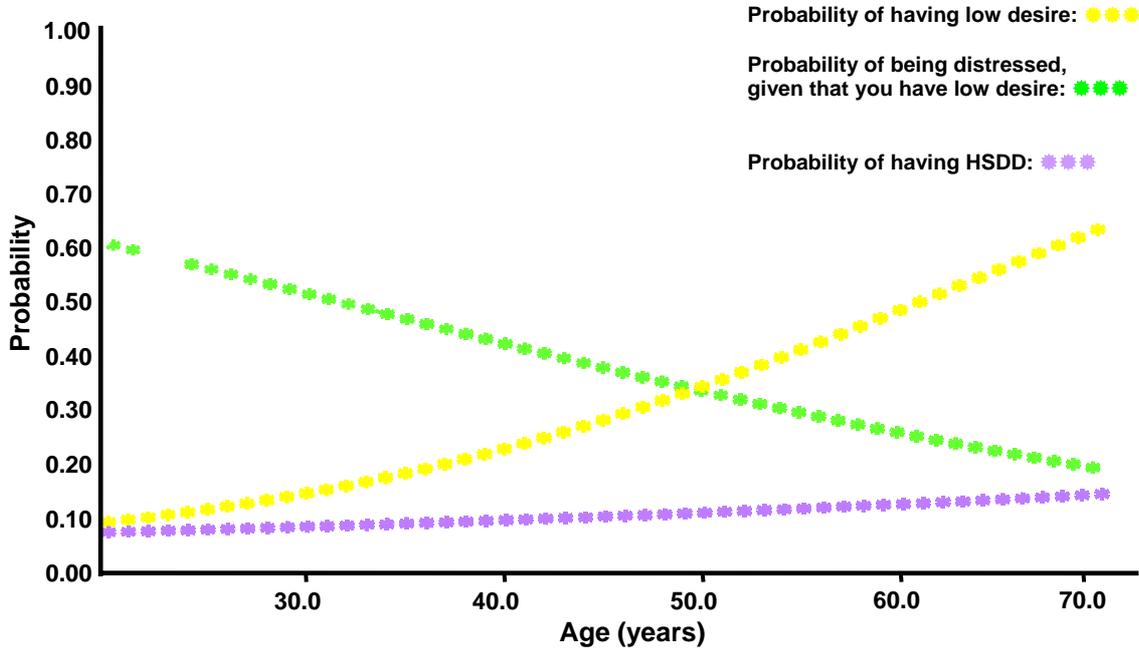


Figure 3.

Percentage of women responding that they experienced the following emotional or psychological states often, very often or always (classified as distressed).

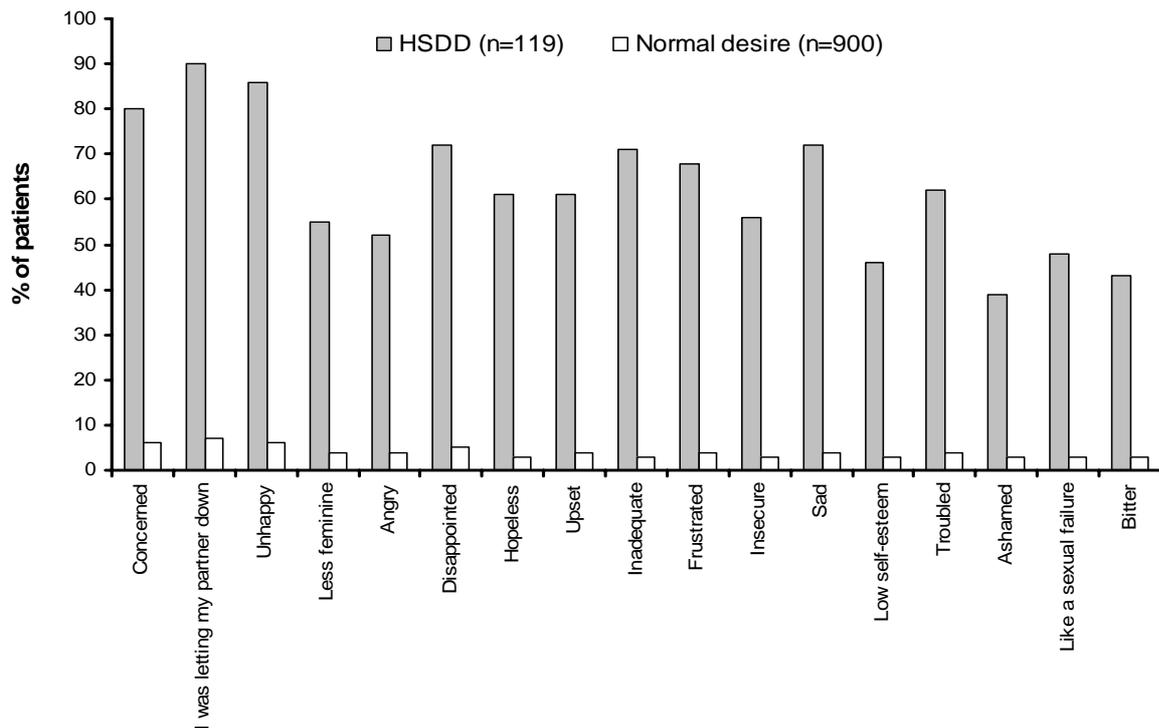


Figure 4.
Female sexual function – flow diagram.

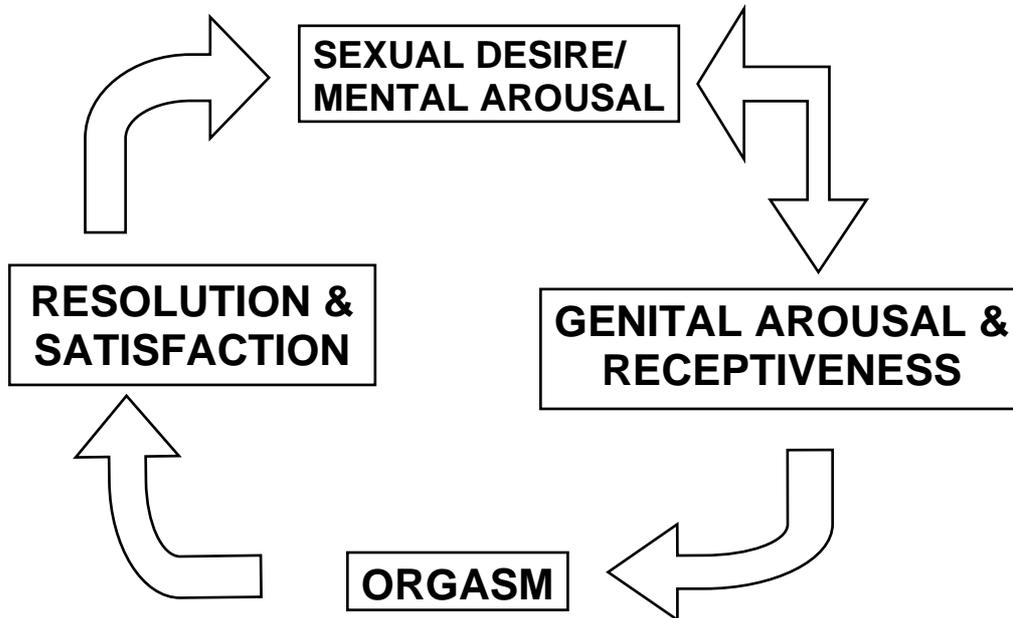


Figure 5.
Treatment algorithm: how to address acquired Hypoactive Sexual Desire Disorder.

