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Assessing female sexual dysfunction in epidemiological studies: why is it necessary to measure both low sexual function and sexually-related distress?

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Introduction

Female sexual dysfunction (FSD) affects the health, relationships and quality of life of substantial numbers of women worldwide. FSD includes disorders of desire, arousal, orgasm and sexual pain. The American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) stipulates that both low sexual function and sexually-related personal distress need to be present for a diagnosis of FSD.[1] This means that only those women who are distressed by their low levels of sexual function can be classified as having FSD.

Female sexual function and dysfunction need to be viewed in context, not simply as physiological phenomena occurring in isolation of other circumstances. A woman's sexual functioning may be influenced by relationship factors, social situations, cultural influences, psychological conditions and her stage of life.[2] For example, if a woman's partner experiences sexual dysfunction this can affect her own sexual responses.[3,4] There is evidence that when men with sexual dysfunction are successfully treated for this condition then desire, subjective arousal, lubrication and orgasmic function in their female partners also improves.[5] Several studies have also provided evidence that the length of time a women has been in a relationship can affect her sexual function.[2,6–8] In addition, psychological and relationship factors may influence whether she feels distressed about her own sexual functioning.[2]

In recent years, the methods used to assess FSD in epidemiological studies have come under increasing scrutiny. When assessing FSD, adhering to current definitions is crucial for consistency across studies. Appropriately validating the instruments used as outcome measures is also important because it provides essential information including how well the instrument can discriminate between women with and without clinically diagnosed FSD.[9]

A wide variety of instruments have been used to assess FSD in the past. These range from more complex scales that have undergone extensive validation studies to a simpler approach where respondents are asked a single question corresponding to each of the main types of sexual dysfunction.[10–12] Certain types of FSD are particularly complex and have been conceptualised as consisting of multiple aspects of sexual functioning and dysfunction.[13–15] Multi-item scales are needed where there is an underlying conceptual entity with several aspects which may not be covered by a single question.[16] Several validated, multi-item instruments have been developed to measure the low sexual function component of FSD.[9,17–21] Examples of these multi-item instruments include the Sexual Function Questionnaire,[17,18] the Profile of Female Sexual Function[9,20] and the Female Sexual Function Index.[19,21] These instruments have been translated into a variety of different languages[22,23] and are beginning to be more widely used in epidemiological, observational studies.[24–26]

The sexual distress component of FSD has attracted increasing attention in published reports.[27] Validated measures of sexual distress have also been developed.[28,29] This has created an opportunity for researchers to measure both the low sexual function and sexually-related personal distress components of FSD as stipulated by the APA.[1] Despite this, studies using sets of simple questions that do not take sexual distress into account have been widely cited and have been highly influential in this area of research.[10,11,30,31]

Sexual difficulties versus sexual dysfunction

Terminology is important in this area of research. While the term 'sexual difficulties' is by no means perfect, it is a useful general term to use when the outcome measure is not validated and/or does not incorporate sexually related distress. In this issue of *Sexual Health*, Moreira *et al*. investigate sexual difficulties and help-seeking behaviours among mature adults in Australia.[32] The authors have asked simple questions regarding sexual difficulties experienced for at least 2 months during the previous year. The term sexual dysfunction is not appropriate to describe their results because the authors have not shown that they have used a validated instrument to assess the sexual distress component of FSD. To their credit, in almost all instances (see paragraph 4 of their methods section for a notable exception), the authors have used the term sexual difficulties rather than sexual dysfunction. Studies such as Moreira *et al*. can provide useful information, however it is important that we do not assume that results regarding sexual difficulties can be extrapolated to FSD.

Studies investigating sexual difficulties can produce widely differing results from those that use validated instruments to

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assess FSD. In Australia, it has been reported that up to 70% of women can experience at least one type of sexual difficulty.[10] However, more recent research conducted in the Australian population[24] suggests that 19% of Australian women, aged 20 to 70 years, experience sexual difficulties that meet APA[1] criteria of a sexual dysfunction. There is evidence that these differences are not simply the result of variance in response rates or recall periods used but are due to differences in the outcome measures used. Prevalence estimates produced by simple non-validated questions were compared against those obtained using validated multi-item scales in the one sample of women.[24] When instruments with the same recall (the previous month) were examined side by side, simple questions produced significantly higher prevalence estimates for desire, arousal, orgasm and pain disorders compared with the validated multi-item scales that incorporated sexual distress.[24] Furthermore that investigation provided evidence that compared with validated multi-item scales, simple questions identify different sub-groups of women as experiencing FSD.[24]

Measuring both low sexual function and sexually-related distress

Although individual definitions vary, in general terms, female sexual function refers to a woman's responses to sexual stimuli. These responses may include (but are not limited to) sexual thoughts and fantasies, feelings of sexual desire or longing for sexual activities to continue, subjective feelings of being aroused, genital sensations of arousal, genital lubrication and orgasm. Sexual distress refers to negative and distressing feelings that a woman may experience about her level of sexual function. However not all women will be distressed by lower levels of sexual function.[33] There is evidence from several investigations in different parts of the world that the decision to include sexual distress in outcome measures used to assess FSD has a substantial impact on both prevalence estimates and risk factors reported in published studies. Previous studies indicate that when sexual distress is incorporated into the method used to measure FSD this can dramatically reduce the prevalence estimate obtained.[24,33–35] Multivariate analysis has indicated that the low sexual function and sexually-related distress components of FSD are associated with a different range of risk factors.[2]

In addition the same risk factor may have opposing effects on the low sexual function and sexually-related distress components of FSD. An investigation conducted in Western Europe and the USA[33] found that associations between desire disorder and aging were initially evident when the outcome measure was an instrument that simply measured low sexual function. However when the outcome measure was modified by incorporating sexually-related distress, associations with aging were no longer significant. The reason for this was that sexually-related distress was negatively associated with age. Consequently when low sexual function and sexual distress were combined into the one outcome measure the opposing effects cancelled each other out so no association with participant age was detected. If only the aggregate outcome measure had been examined important information about the relationship between low desire, sexual distress and age would have been lost. These studies highlight the need to examine low sexual function and sexual distress components of FSD separately when investigating potential risk factors.

There is ongoing debate in the scientific literature regarding which model best represents the female sexual response and what constitutes FSD.[36,37] The APA definitions of FSD draw on the sexual response models proposed by Masters and Johnson[38] and expanded on by Kaplan[39] and Lief.[40] More recently Basson *et al.*[41] have developed a new model of the female sexual response and new definitions of FSD based on their revised model. The Basson model of the female sexual response has received relatively wide acceptance by researchers in this area since its inception. A recent study conducted in Malaysia found a strong correlation between sexual desire/arousal/lubrication aspects of FSD that may support Basson's more circular sexual response model.[42] In addition a survey of nurses, conducted by Sand and Fisher,[37] found that women were equally likely to endorse the Masters and Johnson, Kaplan, and Basson models of the female sexual response. However that investigation also provided data suggesting that the Basson model may best reflect the sexual experiences of women with low sexual function, whereas the Masters and Johnson/Kaplan models are a better representation of the sexual response of women with comparatively higher levels of sexual function.[37] Feminist ideas on the female sexual response have also been put forward.[43] There is current debate as to whether sexual distress should continue to be part of the official definition of FSD.[36] It is also possible that the DSM-IV approach to defining FSD may be more useful as a research tool rather than for day-to-day clinical practice. Whatever the outcome of these deliberations the decision to include or not include sexually-related distress in the definition of FSD will have a substantial impact on both the reported prevalence estimates and reported risk factors for FSD.

Conclusions and recommendations

Sexual distress is part of the current APA definitions of FSD and should be incorporated into epidemiological studies that assess prevalence or risk factors of FSD. It is advisable to present data on the low sexual function and sexual distress components of FSD separately when exploring risk factors because there is evidence that the low sexual function and sexual distress components are associated with a different range of factors. Also the same risk factor may have opposing effects on these components of FSD. Consequently important information may be lost if only aggregate outcome measures are used. When presenting prevalence estimates of FSD it is appropriate to combine low function and distress in order to meet current APA definitions; however, it may also be useful to present estimates of low sexual function and distress separately as well. Because definitions of FSD are continuing to evolve, presenting prevalence estimates for both low sexual function and sexual distress may allow current studies to be compared with those conducted in the future. Finally, validated instruments should be used to assess both the low sexual function and sexual distress components of FSD. Where this is not the case the term FSD should not be

used but the term sexual difficulties is appropriate. However authors should make it clear that results regarding sexual difficulties should not be extrapolated to FSD.

Conflicts of interest

None declared.

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