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TOPIC PAPER

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The use of validated questionnaires to assess female sexual dysfunction

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Abstract There has been a surge in both public and professional interest in the field of female sexual medicine. Questionnaires are useful to assess sexual function. In the field of male sexual medicine, the International Index of Erectile Function questionnaire is considered the gold standard self-assessment instrument. In the field of female sexual medicine, no such instrument exists. A major reason for the lack of a standardized instrument is a result of the continuing evolution of the definition of female sexual dysfunction. Previously available self-assessment instruments are one-dimensional and, therefore, are not appropriate for the current definition of female sexual dysfunction.

We review three multidimensional self-report instruments. These instruments include the Brief Index of Sexual Functioning for Women, the Derogatis Interview for Sexual Functioning, and the Female Sexual Function Index. These instruments have met the basic psychometric criteria of reliability and validity.

Keywords Self-report measure · Female sexual function

There has been a surge in both public and research interest in the field of female sexual medicine. Several studies have demonstrated that female sexual dysfunction is highly prevalent in our society, with rates ranging from 19%–50% [6, 14, 16]. The definition of female sexual dysfunction has evolved over the past 15 years, reflecting the evolving concept that the normal female sexual response cycle is composed of a variety of domains or categories. Therefore multidimensional instruments (questionnaires) are needed to clarify the specific complaint of the patient. Previously, the therapeutic options available to treat female sexual dysfunction were limited, but, as pharmacologic treatment options proliferate, the importance of these psychologic instruments will increase. A recent study that was performed assessed the efficacy of sildenafil citrate in postmenopausal women [4]. In the concluding comments, the authors noted that the self-report questionnaire used to assess response to therapy was not a validated instrument. There are many other examples that demonstrate the need for standardized and validated instruments.

Evaluation of the patient with female sexual dysfunction has evolved along with the definition. Self-assessment tools have been used for many years but the older tools did not reflect the current definition of female sexual dysfunction. Multidimensional instruments are presently available and have the ability to define the specific complaint of the patient. Current self-report questionnaires were developed primarily for use as epidemiologic instruments or to determine the results of pharmacologic treatment. These questionnaires are not diagnostic instruments yet they can compliment the overall evaluation of the patient with sexual dysfunction.

Definition and classification of female sexual dysfunction

The sexual response cycle initially defined by Masters and Johnson [7] and later modified by Kaplan [5] is the basis for the current classification of female sexual dysfunction. The Diagnostic and Statistical Manual of Diseases Classification [1] (4th edition) (DSM-IV) primarily considers a psychiatric basis for sexual dysfunction, although a category exists for sexual dysfunction due to a general medical condition. Sexual dysfunction, as defined by the DSM-IV, will cause marked distress and/or interpersonal difficulties. The World Health

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Organization International Classification of Diseases-10 (ICD-10) [18] definition of sexual dysfunction is similar in many respects to the DSM-IV classification. However, the ICD-10 states that sexual dysfunction does not have an organic basis or involve a disease process. Marked distress or interpersonal difficulties are not described as part of the ICD-10, but the person is not able to participate in the sexual relationship that he or she desires.

In 1998, the International Consensus Conference on Female Sexual Dysfunction [2], convened by the American Foundation for Urologic Disease (AFUD), evaluated the existing classification of Female Sexual Dysfunction as previously defined by the ICD-10 and the DSM IV. The four primary categories as defined by the DSM IV were retained, and expanded to reflect contemporary research and clinical practice. Currently, both psychogenic and organic causes of sexual dysfunction are included. The present categories include sexual desire disorders, sexual arousal disorders, orgasmic disorders, and sexual pain disorders. The category of sexual desire disorders was expanded to include both hypoactive sexual desire disorder and sexual aversion disorder. A new category of noncoital sexual pain was added. The AFUD classification system also includes personal distress in each category.

Questionnaires

Evaluating the patient with female sexual dysfunction continues to evolve. It is clear that the evaluation must begin with a comprehensive history and physical exam, in addition some authors advocate a hormonal evaluation. Physiologic evaluation of the sexual response can include vaginal photoplethysmography or duplex ultrasonography, but these tools are not uniformly available. Rosen and Beck have argued that self-report assessment tools are a more valid measurement of sexual response [11]. Many authors advocate self-report questionnaires, as this form of measurement can be performed in a home setting. Evidence supporting this concept has been demonstrated in a recent study assessing transdermal testosterone replacement in women with sexual dysfunction who had previously undergone oophorectomy [15]. Outcome assessment was measured with a self-report questionnaire (BISF-W) and a telephone interview. Compliance was much greater with the self-report instrument as compared to the interview.

Questionnaires have long played a role in evaluating the patient with sexual dysfunction. Current questionnaires were not developed primarily to be diagnostic tools, but were developed for use in clinical trials or to obtain epidemiologic data. The majority of previously developed questionnaires do not reflect the current International Consensus Conference classification system of sexual dysfunction. As previously noted, sexual function is comprised of multiple categories. Multidimensional questionnaires are, therefore, needed to assess each domain. The goals of all questionnaires are brevity and ease of administration. The majority of questionnaires have met the basic psychometric criteria of reliability and validity. Reliability is the ability of the measuring method to produce reproducible data or information. This is reflected by the reliability coefficient. A reliability coefficient of 1.0 means measurement without error; as this number decreases, the error increases. Validity is considered one of the most fundamental components of psychometrics. The process of validation means the instrument measures what it was intended to measure. Validity is an evolving property because of changing social conditions and, therefore, the process of validation is continual.

The brief index of sexual functioning for women (BISF-W)

The Brief Index of Sexual Functioning for Women (BISF-W) [17] is a 22-item self-report questionnaire. This questionnaire was one of the early multidimensional tools used to assess female sexual dysfunction and was influenced by the similar Brief Sexual Functioning Questionnaire for Men. There were three domains initially addressed: sexual interest/desire, sexual activity, and sexual satisfaction. It was designed to assess both the qualitative and quantitative components of the female sexual experience. Psychometric properties were evaluated in 269 sexually active heterosexual and homosexual women ages 20–73, most of whom were seeking routine gynecologic care. The sample was primarily white and 62% were married. This questionnaire was designed for use in healthy women, as well as in women with organic or inorganic causes of sexual dysfunction. This self-report instrument requires 15–20 min to administer. The instrument was validated with components of the Derogatis Sexual Function Interview (DSFI), as at that time the DSFI was the only multidimensional instrument available.

The BISF-W was recently modified and a scoring algorithm was developed [8]. This questionnaire was modified to prevent overlap of domains and to provide an overall composite score, as well as a score for each domain to facilitate its use in clinical trials. Seven domains are now evaluated; thoughts/desire, arousal, frequency of sexual activity, receptivity/initiation, pleasure/orgasm, relationship satisfaction, and problems affecting sexual function. The domains of thoughts/desire, arousal, and pleasure/orgasm reflect Kaplan's three-phase model of the female sexual response cycle. Receptivity/initiation reflects the behavioral component of sexual desire. Relationship satisfaction and problems affecting sexual function reflect the emotional components of the sexual relationship. A composite score can now be generated by adding domains one through six and subtracting the seventh domain. The seventh domain (problems affecting sexual function) is subtracted so that a higher score will reflect a greater degree of sexual function. The range of composite scores is from –

16 (poor function) to +75 (maximal function). The mean value for the control women was 33.6. This questionnaire was validated in a control population of 225 healthy women ages 20–55. It was also administered to 104 surgically menopausal women ages 20–55. The BISF-W was able to identify the degree of sexual dysfunction in this population as compared to the control group. The authors point out that the use of this device is limited because it does not assess long-term information on the participants' sexual function and as assessment is limited to the past 30 days. Lack of recent sexual activity will lower the overall composite score. Aside from surgical menopause, the device has not been validated in other conditions of sexual dysfunction.

This questionnaire was recently used to assess transdermal testosterone treatment in women with impaired sexual function after oophorectomy. It was able to distinguish between the control group and the women who were treated with testosterone supplementation. It was also administered after treatment and demonstrated an improvement in sexual function in women receiving testosterone therapy. The results of this study further the validation of the instrument.

The Derogatis interview for sexual functioning (DISF/DISF-SR)

The Derogatis Interview for Sexual Functioning (DISF/DISF-SR) [3] is an assessment tool used to evaluate the quality of female sexual functioning. Derogatis has defined five parameters that are important to measure human sexual functioning. These parameters include gender, sexual orientation, modality (method of administration), dimensionality, and construct primacy. As previously discussed, unidimensional tools are not sufficiently specific enough to identify the sexual disorder of interest. The normal sexual response cycle is composed of several domains. Construct primacy refers to the variability of the measuring model. For example, one aspect of the measuring device will assess an explicit sexual response (vaginal lubrication), whereas the same device will measure a less explicit measure (body image). The DISF/DISF-SR is a multidimensional assessment instrument. This assessment tool is unique because it involves an interview process and a self-report questionnaire. Derogatis has chosen this unique combination because some parameters are better assessed by a self-report questionnaire and as he wanted the flexibility of an interview process. There are five domains or constructs assessed in the DISF/DISF-SR. They include sexual cognition and fantasy, sexual arousal, sexual behavior and experiences, orgasm, and sexual drive and relationship. A total of 25 questions were developed. An item score, domain score and total composite score can be generated from this instrument. Both the interview and self-report questionnaire are easy to administer, with each component taking 15–20 min to administer. Both instruments are reliable and have been validated in community populations. In addition to English, it is also available in Danish, Dutch, French, German, Italian, Norwegian, and Spanish. As this device is used in clinical trials, the validation process will continue.

Female sexual function index

The Female Sexual Function Index (FSFI) [12] is the newest assessment tool developed by a multidisciplinary group of experts in female sexual dysfunction. Item selection and categories were based on the AFUD classification system of female sexual dysfunction. This 19-item survey assesses the six domains of sexual function. This instrument emphasizes the domain of female sexual arousal disorder, which was further divided into two separate domains of lubrication (four items) and arousal (four items). This breakdown will assess both the peripheral (lubrication) as well as the central (subjective arousal and desire) components. Other domains assessed include desire (two items), pain (three items), orgasm (three items), and satisfaction (three items). A scoring algorithm was devised to assess each domain and a composite score, thus, generated. Score ranges for items 3–14 and 17–19 are 0–5 and for items 1, 2, 15 and 16 are 1–5. The composite score is then determined by the sum of the domains multiplied by the domain factor. The full-scale score range is from 2.0 to 36.0, with higher scores associated with a lesser degree of sexual dysfunction. This instrument was validated in a control population of 131 sexually active women ages 21–68 years and was also administered to 128 women ages 21–69 who had been diagnosed with female sexual arousal disorder. The groups were comparable in education, race, and income, although there was a higher percentage of married women in the group with female sexual arousal disorder. This instrument was reliably able to distinguish between the two groups, is a reliable self-report measure of female sexual dysfunction and requires 15 min to administer. It was designed to measure outcomes to therapeutic response and to obtain epidemiological data but does not address issues related to personal distress.

This assessment tool has proven to be very useful. At the recent International Society for the Study of Women's Sexual Health (formally the Female Sexual Function Forum) meeting in Boston (2001), several studies using the FSFI were presented [9, 10]. Not only did this provide further validation of this instrument but also provided excellent data comparing domain and composite scores among different studies.

Conclusion

In clinical settings, desire and arousal disorders are very common among female patients, whereas in community studies orgasm and arousal disorders prevail [16]. It is important to choose instruments that address these

aspects of female sexual dysfunction. The commonality of the three instruments we have reviewed is that they assess the main components of Kaplan's three-phase model. The instruments differ by considering emotional/behavioral aspects of sexual dysfunction, frequency of sexual activity, or the application of the International Consensus Conference on Female Sexual Dysfunction classification system. Instruments that assess the personal distress component of sexual dysfunction are currently undergoing validation and development. One diagnostic instrument currently being developed is the Female Sexual Function Diagnostic (FSDD) [13]. This instrument is currently undergoing the validation process to assist in the diagnosis of female sexual arousal disorder.

A variety of instruments will soon be available to assess the patient with female sexual dysfunction. Nevertheless, these instruments should never substitute for the comprehensive exam, they are but one component of an overall evaluation. It is unlikely that a single instrument will suffice for all clinicians diagnosing and treating sexual dysfunction. Current literature reflects the proliferation of instruments, many of which have not met the basic psychometric criteria of reliability and validity. Without the use of standardized instruments it will be difficult to compare treatments, especially as more treatments become available.

The ideal instrument that measures female sexual dysfunction should be multidimensional, reliable, and valid. The instrument should be able to be administered in a 15–20 min time period and versions in other languages should be validated.

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