

## Validation of Sexual Functioning Questionnaire in Indian Patients

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### ABSTRACT

**Objective:** To establish norms for sexual functioning questionnaire (SFQ) in Indian population. **Materials and Methods:** 100 male subjects, diagnosed with depressive disorder and currently in a state of clinical remission for a period of at least 4 weeks were evaluated on SFQ and Arizona Sexual Experience Questionnaire (ASEX). **Result:** By using receiver operating characteristics (ROC) curves a score of 14 was considered to be a cutoff for sexual dysfunction as per SFQ. This cutoff yielded a sensitivity of 91.7% and specificity of 86.4% for the detection of sexual dysfunction. The PPV of the instrument at this cutoff was 87%. **Conclusion:** A cutoff of 14 should be used to define sexual dysfunction as per SFQ.

**Key words:** Sexual dysfunction, sexual functioning questionnaire, validation

### INTRODUCTION

Sexual dysfunction is quite common in community as well as among the patients attending the clinics. Large epidemiological surveys of community samples from the United States have reported that more than 40% of women and 30% of men suffer from some form of sexual dysfunction, with low sexual desire in women (22%) and premature ejaculation in men (21%) being the most prevalent.<sup>[1]</sup> An analysis of sexual dysfunction across eight European countries revealed that up to 34% of women and 15% of men report low sexual desire.<sup>[2]</sup>

One of the major problems in the research on sexual dysfunction is lack of standardized instruments. Some studies have assessed sexual dysfunction by using

spontaneous reporting or open questions that may be interpreted differently by different patients; hence, the findings may not be reliable.<sup>[3,4]</sup> Some studies have used inconsistent and unvalidated measures of sexual dysfunction.<sup>[5,6]</sup> In recent times, due to the constant efforts of various researchers, many scales such as Arizona Sexual Experience Questionnaire (ASEX),<sup>[7]</sup> Brief Male Sexual Functioning Inventory (BMFSI),<sup>[8]</sup> International Index of Erectile Function (IIEF),<sup>[9]</sup> Sexual Function Questionnaire (SFQ),<sup>[10]</sup> and Changes in Sexual Functioning Questionnaire (CSFQ)<sup>[11]</sup> etc. have been designed and validated to assess the different domains of sexual functioning. Still certain problems persist in using these questionnaires, such as lack of coverage of all the domains of sexual functioning. ASEX<sup>[7]</sup> measures quality of sexual functioning in terms of five questions, each representing one domain: Drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm, and satisfaction from orgasm. However, retarded ejaculation is difficult to evaluate when the subjects are assessed on ASEX. One of the most limiting factors in using these questionnaires is lack of cross-cultural validity; hence, there is a need to validate these questionnaires across cultures and establish the normative values.

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SFQ<sup>[10]</sup> is a scale to measure sexual dysfunction, which allows assessment of sexual function in the domains of libido, arousal (erection in men, vaginal lubrication in women), masturbation, orgasm (including dyspareunia), and ejaculation. The scale was specifically designed to assess sexual functioning of patients with severe mental disorders and can be used to evaluate physical sexual experience irrespective of whether the patient is in a relationship or not. The questions are worded in such a way that these are direct 'true/false' questions regarding concrete aspects of sexual functioning, assessing various domains of sexual functioning. Although two previous studies<sup>[12,13]</sup> used this scale in India, these studies have not validated the scale in Indian population. Even while describing the original scale, authors used arbitrary cutoff of one standard deviation above the mean values to define the presence of sexual dysfunction.<sup>[10]</sup>

In this background, this study attempted to establish norms for SFQ in Indian population by using ASEX as a reference scale. ASEX has been widely used in multinational trials evaluating the efficacy of different psychotropic agents.<sup>[6]</sup>

## MATERIALS AND METHODS

This study was carried out at the Postgraduate Institute of Medical Education and Research, Chandigarh, India, which is a multispecialty, teaching, tertiary-care hospital providing services to a major part of North India. The study was approved by the Institute Ethics Committee. Only those subjects who provided the informed consent were recruited for the study.

The validation of SFQ was conducted as part of another study,<sup>[14]</sup> which involved evaluation of sexual dysfunction in patients of depression receiving antidepressants. The participants were 100 male subjects, diagnosed with depressive disorder (confirmed by Mini International Neuropsychiatric Interview [MINI]),<sup>[15]</sup> on treatment with antidepressants for at least 3 months and currently in a state of clinical remission (Hamilton Depression Rating Scale (HDRS <7)<sup>[16]</sup> for a period of at least 4 weeks. The subjects were required to be between 20 and 50 years of age, sexually active heterosexuals who had a stable marital relationship. Those with the history of sexual dysfunction before the onset of depression (confirmed by history provided by the patient and the spouse), with comorbid psychiatric disorders or comorbid diagnosis of substance dependence including nicotine dependence (smoking >20 cigarettes/d) or consuming alcohol daily (>30 g/d), with organic brain syndrome or chronic comorbid medical illness that could cause sexual dysfunction were excluded from the study. One may refer to the previously published paper for detailed methodology.<sup>[14]</sup>

Sociodemographic and clinical details of these patients were recorded on a structured performa. Patients were assessed on ASEX<sup>[7]</sup> and SFQ<sup>[10]</sup> apart from the other scales like Hamilton-Anxiety Scale (HAM-A),<sup>[17]</sup> Compliance Rating Scale,<sup>[18]</sup> Dyadic Adjustment Scale (DAS),<sup>[19]</sup> WHO Quality of life Bref scale (WHOQOL-Bref),<sup>[20]</sup> and Global Assessment of Functioning Scale (GAF)<sup>[21]</sup> as a part of the main study. All the assessments were conducted over 1-2 sessions. To avoid carry over bias, patients were first assessed on SFQ and then were asked to fill the sociodemographic and other scales before assessing on ASEX. While assessing patients for sexual dysfunction on SFQ, detailed questions were asked about libido, arousal (erection in men, vaginal lubrication in women), masturbation, orgasm (including dyspareunia), and ejaculation. It assesses sexual functioning over the past 1 month. It is designed in such a way that higher scores indicate greater dysfunction.

According to the established cutoff of ASEX, in this study 23 patients had sexual dysfunction. These data were used to generate the cutoffs for SFQ.

Data were analyzed using SPSS version 14. We estimated the sensitivity, specificity, and positive predictive value (PPV) for the detection of the sexual dysfunction. We then plotted receiver operating characteristics (ROC) curves to estimate the discriminating power of the instrument and the optimal cut-off for case detection. The optimum cut-off was chosen as the point on the ROC curve at which sensitivity and specificity were maximized.<sup>[16]</sup> This corresponds to the point on the ROC curve nearest to the upper-left corner of the ROC graph since maximizing sensitivity would correspond to a large *y* value on the ROC curve and maximizing specificity would correspond to a small *x* value on the ROC curve.

## RESULTS

Twenty-three subjects were found to have sexual dysfunction as per ASEX. Nine subjects had dysfunction in the domain of desire, five had arousal difficulty, six subjects had problem with erection, and eight subjects had problem with orgasm. Some of the subjects (*n* = 5) had sexual dysfunction in more than one domain.

As a part of validation analysis of SFQ, the ROC curve was plotted to illustrate the relationship between the total score on SFQ and the diagnosis of sexual dysfunction as per ASEX. After running the analysis by using the cut off from 10 to 14, a cutoff of 14 was chosen. The area under the curve (AUC), a measure of the discriminating ability of the screening tool, was 0.89 for the SFQ total score. This cutoff yielded a sensitivity of 91.7% and specificity of 86.4% for the detection of sexual dysfunction. The PPV of the instrument at

**Table 1: Cutoffs for sexual dysfunction as per SFQ**

Variables	Cutoff score	Area under curve	Sensitivity (%)	Specificity (%)	Positive predictive value (%)
Presence of sexual dysfunction based on total score	14	0.890	91.7	86.4	87
Reduced libido	2	0.933	100	86.5	88.1
Problem with physical arousal	2	0.800	72	87.8	85.5
Problem with erection	4	0.890	91.7	86.4	87.1
Orgasmic dysfunction	3	0.933	100	86.5	88.1
Problem with ejaculation	3	0.732	66.7	79.8	76.8

**Table 2: Comparison of sexual dysfunction as per ASEX and SFQ (using new cutoffs)**

Variables	ASEX	SFQ	Kappa value
Desire/Drive	9	11	0.778 ( $P<0.001$ )
Arousal	5	18	0.387 ( $P<0.001$ )
Erection	6	12	0.396 ( $P<0.001$ )
Ejaculation	—	6	
Ability to reach orgasm and satisfaction with orgasm	8	11	0.594 ( $P<0.001$ )
Global sexual dysfunction	14	20	
Total number of patients with sexual dysfunction	23	27	0.81 ( $P<0.001$ )

this cutoff was 87%. As shown in Table 1, the cutoffs for various domains were 2 (for reduced libido), 2 for problem with physical arousal, 4 for problem with erection, 3 for orgasmic dysfunction, and 3 for problems with ejaculation.

After determining the cutoffs for SFQ, we compared the prevalence of sexual dysfunction as per ASEX and new cutoffs of SFQ. It was seen that 27 patients had sexual dysfunction as per SFQ, in contrast to 23 with ASEX and there was high level of concordance between the two. For the prevalence of sexual dysfunction, in various domains, as shown in Table 2, we evaluated the kappa value for each domain. For the domain of orgasm, ASEX, evaluates the domain orgasm by using two questions, that is, ability to reach orgasm and satisfaction with orgasm, in contrast SFQ assesses this as only one domain by using multiple questions. So, any patient who had dysfunction in one of the ASEX domains was considered to have dysfunction and prevalence was compared accordingly. It was seen that Kappa values were good for the domains of desire/derive and orgasm. Kappa values were significant for the domain of arousal and erection was only about 0.4, suggesting a fair level of concurrence.

The internal consistency of the scale was good (Cronbach's alpha 0.852). The Guttman Split half-coefficient for the scale was 0.70 and the Spearman Brown Coefficient was 0.778.

## DISCUSSION

It is suggested that sexual practices and importance given to sexual potency vary from culture to culture.

Hence, for defining sexual dysfunction, cutoffs norms established in one culture may not be applicable to another. This study attempted to establish the cutoffs for SFQ in Indian setting. SFQ is a simple scale, which can be used to evaluate sexual dysfunction in subjects of either gender. It can be used in subjects who are in active sexual relationship with a partner or who indulge in only self-stimulation (i.e. those indulging in masturbatory practices only).

We used ASEX as the benchmark to drive the cutoffs for SFQ. ASEX was selected, because it is a well-established scale to evaluate sexual dysfunction, which is widely used in many multinational drug trials to evaluate the sexual dysfunction associated with investigational drugs. We found that the appropriate cutoff for SFQ that can be used to define overall sexual dysfunction in males is 14. For the various domains, the cutoffs are 2 (for reduced libido), 2 for problem with physical arousal, 4 for problem with erection, 3 for orgasmic dysfunction, and 3 for problems with ejaculation.

By using these cutoffs a high level of concurrence with ASEX was obtained for overall sexual dysfunction. In terms of domains too there was good concordance for the domain of desire/drive and orgasm. However, for the domains of erection and ejaculation, the concordance was low, but still significant. The low level of concordance could be due to the reason that for ROC the overall scoring on the ASEX was used, rather than scoring on each domain. ASEX itself uses varying cutoffs to define sexual dysfunction and it is not clear whether the score of 4 or 5 is to be used to define dysfunction in the specific domain.

The cutoffs observed in the study are significantly different from that reported by the authors in the description of original scale.<sup>[10]</sup> However, the cutoffs derived in the present study are very similar to that used in a previous study from India, which had used different methodology to derive the cutoffs.<sup>[12,13]</sup>

This study is limited by a relatively smaller sample size. The cutoff scores were evaluated in a group of patients rather than in a healthy population. The study did

not include males without a partner and there were no females in the study sample.

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