RESEARCH ARTICLE

Comparison of degree of sexual dysfunction by using female sexual functional index-6 in the subfertile and other females presenting to tertiary care hospital

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Abstract

Objective: To compare the prevalence of sexual dysfunction between subfertile females and the general population, and to check the validity of the translated modified version of the Female Sexual Functional Index Score in Pakistani population.

Method: The cross-sectional, prospective, comparative, analytical study was conducted from February to July 2023 at the Shifa College of Medicine Hospital and the Kahuta Research Laboratories Hospital, Islamabad, and comprised females aged 18-40 years who had been sexually active for at least 4 preceding weeks. Subfertile women were placed in group A, while group B had normal women. Data was collected using the translated version of the Female Sexual Functional Index Score, limited to only 6 of the total 19 questions (Nos 2, 4, 7, 11, 16 and 17) to assess the female sexual dysfunction covering all the six domains of desire, arousal, lubrication, orgasm, satisfaction and pain. The total score ranged 2-30, with lower scores indicating worse sexual function. The cutoff point was 19, with <19 considered an indication of sexual dysfunction. Data was analysed using SPSS 23.

Results: Of the 276 patients, 138(50%) were in each of the two groups. The overall mean age was 31.5±4.1 years. Mean score was 19±3.4. There was a significant difference in the scores between groups A 17.53±2.98 and B 20.4±3.26 (p<0.001). Patients with polycystic ovary syndrome had a higher mean score of 18.47±2.4, while those with endometriosis had mean score 15.91±3.4.

Conclusion: The prevalence of sexual dysfunction in the subfertile group was noted. The translated modified version of the Female Sexual Functional Index Score was found to be a valid tool with moderate reliability for the assessment of sexual dysfunction in Pakistani women.

Keywords: Infertility, Sexual satisfaction, Sexual dysfunction. (JPMA 75: 1077; 2025)

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Introduction

Subfertility is a major health concern, affecting up to 12% of couples worldwide.[1] Subfertility is classified as either primary or secondary, depending upon the previous history of conception irrespective of outcome. The main causes are broadly grouped as male factor in about 30% of cases, female factor in about 45% of cases, and unexplained with no definitive cause in about 25% of couples.[1]

Sexual function is a major component of both men and women's health.[1,2] Sexual dysfunctions is defined as a sexual desire, arousal, orgasm or pain disorder that has a major impact on their psychological wellbeing and quality of life.[2,3] It is more prevalent in infertile females (5-55%) compared to the general population.[1] It can occur due to a variety of causes that may be categorised as anatomical, psychological, functional, pelvic floor muscle dysfunction, drug and substance abuse, neurological and hormonal.[2] The association between the subfertility and sexual dysfunction is vice-versa which may be either a consequence or a cause.[1]

Female sexual dysfunction is under-treated and under-recognised in traditional societies due to the fact that patients have to self-report the issue. Healthcare professionals in majority of cases do not openly talk about this health issue as it is considered a taboo. Thus, a standardised, self-validated, 19-item tool covering the multiple domains of sexual dysfunction was devised in 2000, called the Female Sexual Function Index-19 (FSFI-19), having 6 domains (desire, arousal, lubrication, orgasm, satisfaction and pain), and the tool has since been translated into several languages.[2,3] The scale was modified into 6-question tool, named FSFI-64 that covers all the 6 domains, but reduces the time taken to fill the questionnaire. The modified version has been validated and is meant to be a reliable tool in diagnosing the sexual dysfunction in different ethnicities, like Iranian infertile women, Spanish and Turkish women.[2,5,6]

Limited work has been done in this field in Pakistan. The current study was planned to fill the gap by comparing the

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sexual dysfunction in subfertile women and the general population, and to check the validity of the translated version of FSFI-6 in diagnoses.

Subjects and Methods

The cross-sectional, prospective, comparative, analytical study was conducted February to July 2023 at the Shifa College of Medicine Hospital and the Kahuta Research Laboratories (KRL) Hospital, Islamabad. After approval from institutional ethics committee, the sample size was calculated using the World Health Organisation (WHO) calculator with 5 % level of significance, 80% power of test, with proportion of infertile women with sexual dysfunction 47 % and of fertile women 30%.[7] The sample was raised using non-probability consecutive sampling technique from among those attending the gynaecology clinic. Those included were females aged 18-40 years who had been sexually active for at least 4 preceding weeks. Subfertile women, including both primary and secondary type, were placed in group A, while group B had normal women. The participants in group A were infertile women attending the clinic, while those in group B were females seeking help for complaints other than infertility. Those excluded were cases having premature ovarian insufficiency, previous pelvic surgeries (including cystectomy and hysterectomy), post-menopause (including surgical menopause), chronic medical disorders (diabetes mellitus, autoimmune disorders, thyroid disorder, chronic renal disease, cardiovascular disease, neurological disorder), psychiatric disorder and depression, those using drugs, like sedatives and anticholinergics, smokers, pregnant and lactating, those with language barrier and those not willing to participate.

After taking informed consent from all the subjects, data was collected using a two-part questionnaire. Part A consisted of baseline demographic profile, including age, body mass index (BMI), years of marriage, parity, etc. Part B was the Urdu version of the FSFI (FSFI-U), which is the Urdu version of the original FSFI-19 scale, and was validated in the female population in Lahore.[8] However, the current study used only 6 questions (Nos 2, 4, 7, 11, 16 and 17) covering all the 6 domains of desire, arousal, lubrication, orgasm, satisfaction and pain. Questions 2 and 16 were about desire and satisfaction, respectively, and were rated on a 5-point Likert scale, while the other questions were rated on a 6-point Likert scale. The total score ranged 2-30, with lower scores indicating worse sexual function. The cutoff point was set at 19, with score <19 indicating sexual dysfunction.[4] The subjects were provided a separate private space to self-fill the profroma that took around 3-5 minutes.

Data was analysed using SPSS 23. Data were reported as mean±standard deviation, median with interquartile range (IQR), or as frequencies and percentages, as appropriate. Comparison of mean values between the groups was done using student *t*-test for independent variables. For qualitative variables, Pearson and chi-square tests were used. P<0.05 was considered statistically significant.

Results

Of the 312 questionnaires received, 276(88.5%) had been fully and correctly filled. Of them, 138(50%) were in each of the two groups. The overall mean age was 31.5±4.1 years. BMI and other data was also noted (Table 1). In group A, 86(62.3%) women had primary subfertility, and 52(37.7%) had secondary subfertility. The causes of subfertility were also noted (Figure).

Table-1: Intergroup cmparison of demographic variables.

Variable	Study group n (%)	Control group n (%)	*p*-value
BMI			
Low	1 (33.3)	2 (66.7)	0.001
Normal	39 (36.1)	69 (63.9)	
Overweight	56 (54.4)	47 (45.6)	
Obese	42 (67.7)	20 (32.3)	
Family Income			
Low	54 (57.4)	40 (42.6)	0.097
Middle	82 (47.1)	92 (52.9)	
High	2 (25%)	6 (75)	
Number of miscarriages			
None	103 (51.5)	97 (48.5)	0.849
1	26 (44.8)	32 (55.2)	
2	8 (50)	8 (50)	
≥3	1 (50)	1 (50)	
Employment			
Yes	30 (34.1)	58 (65.9)	< 0.000
No	108 (57.4)	80 (42.6)	
Parity			
Nullipara	116 (92.8)	9 (7.2)	< 0.000
Para one	17 (27.4)	45 (72.6)	
Multipara	5 (5.6)	84 (94.4)	
Age (years)	31.5±4.2	31.5±4.1	0.885
Time since marriage (years)	5.9±3.6	6.0±4.6	0.899

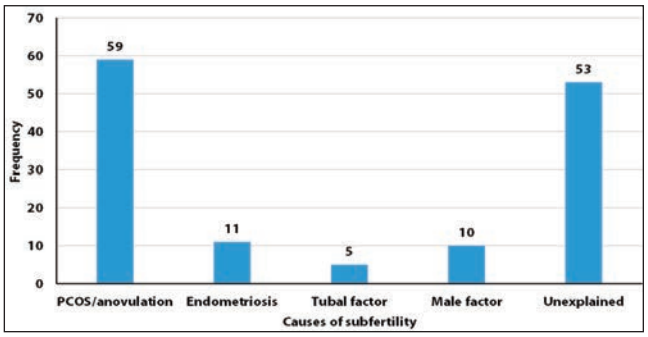

Figure: Total number of sub-fertile patients and the causes.

Mean FSFI-6 score was 19±3.4. There was a significant difference in the scores between groups A 17.53±2.98 and B 20.4±3.26 (p<0.001). According the cut-off value of 19, 126(45.7%) participants had sexual dysfunction, while 150(54.3%) did not have sexual dysfunction. Spearman's correlation showed that the FSFI score had a weak but significant negative correlation with time since marriage (r= 0.134, p=0.026). Sexual dysfunction was significantly more prevalent in group A 88(63.8%) compared to group B 38(27.5%) (p<0.000), odds ratio [OR]: 0.216, 95% CI: 0.130-0.360) (Table 2).

Within group A, there was no significant difference between primary and secondary subfertility subgroups (17.31±3.04 vs 17.88±2.85, p= 0.276). However, FSFI-6 score was significantly related to the cause of subfertility (p=0.011). Post-hoc analysis showed that mean FSFI in participants with polycystic ovary syndrome (PCOS)/ anovulation was significantly higher than that of the participants with endometriosis (18.47±2.4 vs 15.91±3.4; p=0.007) and those with unexplained causes of subfertility (18.47±2.4 vs 16.8±3.1; p= 0.003).

Mean FSFI was not significantly different in the participants having a history of miscarriage (18.37±2.8 vs 17.24±3.0, p=0.052). Mean FSFI was also not significantly different among nulliparous, primipara and multiparous participants (p=0.574).

The reliability of FSFI-6 scale was 0.56. After deleting the question about the level of discomfort, the reliability increased to 0.744. Pearson correlation showed significant validity of the tool.

Table-2: Distribution of different parameters of sexual dysfunction.

Parameter	Study group n (%)	Control group n (%)	*p*-value
How often lubrication happens			
No sexual activity	1 (100)	0 (0)	< 0.000
Almost always	16 (33.3)	32 (66.7)	
Most of times	26 (33.8)	51 (66.2)	
sometimes	67 (69.8)	45 (40.2)	
A few times	24 (82.8)	5 (17.2)	
Almost never	4 (44.4)	5 (55.6)	
How often climax achieved			
No sexual activity	0 (0)	3 (100)	< 0.000
Almost always	6 (15.4)	33 (84.6)	
Most of times	18 (29)	44 (71)	
sometimes	78 (64.5)	43 (35.5)	
A few times	29 (69)	13 (31)	
Almost never	7 (77.8)	2 (22.2)	
Satisfaction level			
Very satisfied	2 (15.4)	11 (84.6)	< 0.000
Moderately satisfied	21 (28.8)	52 (71.2)	
Equally satisfied or dissatisfied	81 (55.1)	66 (44.9)	
Moderately dissatisfied	30 (78.9)	8 (21.1)	
Very dissatisfied	4 (80)	1 (20)	
Level of discomfort			
Did not attempt intercourse	0 (0)	1 (100)	0.134
Almost always	21 (63.6)	12 (36.4)	
Most of times	33 (54.1)	28 (45.9)	
sometimes	41 (47.7)	45 (52.3)	
A few times	32 (52.5)	29 (47.5)	
Almost never	11 (32.4)	23 (67.6)	
Level of sexual arousal			
Very high	1 (25)	3 (75)	0.001
High	13 (28.9)	32 (71.1)	
Moderate	88 (49.4)	90 (50.6)	
Low	29 (74.4)	10 (25.6)	
Very low	7 (70)	3 (30)	
Level of sexual desire in 4 weeks			
Very high	3 (25)	9 (75)	< 0.000
High	9 (24.3)	28 (75.7)	
Moderate	97 (51.9)	90 (48.1)	
Low	22 (73.3)	8 (26.7)	
Very low	7 (70)	3 (30)	

Discussion

FSFI-19 is a lengthy tool for evaluating sexual dysfunction, and hence, it cannot be used in busy outpatient departments.[9] As a result, the FSFI-6 has recently been implemented in numerous parts of the world, and the translated version tool has been validated in studies conducted in Turkey, Brazil, Iran and other countries. The shortened tool takes <3 minutes and assists in the rapid diagnosis of sexual dysfunction.[4]

The current study found a significantly greater prevalence of sexual dysfunction in the subfertile group (63.8%) compared to the control group (27.5%) (p<0.000). This is consistent with case-control research conducted in India,[10] in which the prevalence in the subfertile group was 63.67%. However, in contrast to the current findings, the fertile group in the Indian study had a higher prevalence of approximately 46.35%. A meta-analysis in Iran revealed a greater prevalence in infertile females — roughly 64.3%.[11] However, one cross-sectional study in Egypt having 305 infertile females found a higher frequency of sexual dysfunction (88%),[12] while another comparative study in Egypt showed a prevalence of roughly 47% in the infertile group and 26% in the fertile group.[7]

In contrast to the current findings, a study conducted in a teaching hospital in Sub-Saharan Africa[13] found a negligible association between sexual dysfunction and subfertility (31.2%) compared to 63.8% in the current study. However, the prevalence of sexual dysfunction in the study's control group was 22.6%, which was consistent with the current findings of 20.9%.

Literature search revealed a wide prevalence of sexual dysfunction in both fertile and subfertile groups. A study

in India analysed 153 fertile females, and the prevalence was 55.3%. The primary variables identified in that study were having been married for >16 years, having a gynaecological condition, such as endometriosis or adenomyosis, and undergoing psychological discomfort or disorder.[14] Female participants with generalised anxiety disorder and psychiatric illness were excluded from the current study.

Desire, arousal, satisfaction and orgasm were the domains found the most affected in the current study's subfertile population. However, the least affected domain with non-significant result between the groups was discomfort/pain during sexual intercourse. In one study, the satisfaction domain was the least affected.[13] A meta-analysis of 11 comparative studies conducted in 2017 found that lubrication, orgasm and satisfaction were the most affected categories, whereas desire and pain were the least influenced.[15] Another study found that infertile females were most affected in terms of arousal, lubrication, orgasm and satisfaction,[12] which was similar to the current findings. An Iranian study revealed a higher prevalence of desire disorder.[11]

The current study found a higher frequency of sexual dysfunction in individuals with endometriosis, with an average FSFI-6 score of 15.91±3.4. Patients with PCOS had a higher mean score of 18.47±2.4. Similarly, a study in India[10] found that people with endometriosis had more sexual dysfunction. The cause could be dyspareunia or chronic pelvic pain. A study in Iran[1] found that those with PCOS had a lower total FSFI score than those with endometriosis, which contradicted the current finding. Obesity, hirsutism and depression because of body dysmorphism were thought to be the primary causes of higher degree of sexual dysfunction, which affected libido and frequency of coitus.

The current study observed a significant association of sexual dysfunction with unemployment and BMI. A Saudi Arabian study found that having a high BMI, being unemployed, having a low socioeconomic status, and being age >40 were associated with an increased risk of sexual dysfunction. However, the independent variables were low socioeconomic level and age >40 years.[3] But the current subjects had an average age of 31.5±4.1 years so there was no significant association noted. A study in Paraguay highlighted the association of mood disorders with sexual dysfunction[16] which were excluded in the current study.

The current study, to our knowledge, is the first in Pakistani population to take the subfertile population into account. Several studies have been undertaken on those with diabetes, lower urinary tract symptoms and depressive disorders, as well as married women.[17,18] Regarding the reliability of the FSFI-6 scale, the current study found a moderate reliability of 0.56 due to non-significant results in the study groups with respect to the discomfort/pain domain. This could indicate that other gynaecological factors in the control group contributed to the pain during coitus. However, other population studies demonstrated strong reliability, such as the South Korean translated version, which had reliability of 0.88.[19] More research with a wider demographic subgroup is needed to prove the tool's reliability and validity in the local context.

The current study has a limitation. Because of the cultural sensitivity of the topic, the participants; emotional responses may have influenced how they answered the questions. Moreover, the researchers had little information about women's partner, and that may have affected the outcome.

Conclusion

The prevalence of sexual dysfunction in the subfertile group was 63.8% compared to the 27.5% in the control group. All the domains were significantly affected in the subfertile group except for the pain domain, which was equally affected in both the groups. The FSFI-6 scale was found to be a valid tool with moderate reliability for the assessment of sexual dysfunction in Pakistani women.

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Author Contribution:
MMP: Concept, statistical analysis, interpretation and final approval.
AQK: Statistical analysis, data collection and interpretation of data.
AS: Data collection and writing.
KK & SMN: Critical analysis and final approval.
AI: Literature review and drafting.