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PREVALENCE OF FEMALE GENITAL MUTILATION AND ITS ASSOCIATION BETWEEN FEMALE GENITAL MUTILATION AND SEXUAL DYSFUNCTION PRESENTED AT TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To determine the prevalence of female genital mutilation (FGM) and assess its association with female sexual dysfunction among women presenting to a tertiary care hospital.

Methods: This cross-sectional comparative study was conducted at the Department of Obstetrics and Gynecology, Shaikh Zaid Women Hospital, Larkana. A total of 280 women aged 15–49 years were enrolled through non-probability consecutive sampling. FGM was confirmed by clinical examination and classified as Type I or Type II according to World Health Organization criteria. Female sexual dysfunction (FSD) was assessed using the Female Sexual Function Index (FSFI), with a score ≤26 indicating FSD. Data were analyzed using SPSS version 20, and associations were assessed using the Chi-square test.

Results: The mean age of participants was 31.8 ± 7.4 years. FGM was identified in 112 (40.0%) women, while 168 (60.0%) had no history of FGM. Among women with FGM, Type II FGM was more common than Type I FGM (58.9% vs. 41.1%). Female sexual dysfunction was significantly more prevalent among women with FGM than among those without FGM (87.5% vs. 28.6%, $p<0.001$). Women with FGM had significantly lower mean FSFI scores (22.4 ± 4.8 vs. 28.7 ± 4.1, $p<0.001$). FSD was also more common in women with Type II FGM compared with Type I FGM (95.5% vs. 76.1%, $p=0.003$).

Conclusion: Female genital mutilation was significantly associated with female sexual dysfunction, particularly among women with Type II FGM. Preventive strategies and awareness programs are needed to eliminate this harmful practice.

KEYWORDS: Female genital mutilation, female sexual dysfunction, FSFI, sexual health, Pakistan.

INTRODUCTION

Female genital mutilation (FGM) or female genital cutting FGC) includes all procedures that involve the partial or total removal of the external female genitalia or other injury to the female genital organs for nonmedical reasons. Internationally, this practice is well documented as a violation of the human rights of women and girls and remains a serious global public health challenge (1). Nevertheless, 230 million women and girls, according to the World Health Organization (WHO) and UNICEF estimates, have undergone FGM worldwide, and 4 million girls are at risk each year. It is practiced primarily in certain regions of Africa, the Middle East, and Asia, and is usually enforced through cultural, social, and traditional dictates (2).

FGM is practiced in 29 countries with varying degrees of occurrence. National surveys have shown prevalence rates over 80% in certain nations, including Sudan and Somalia, while roughly 72% of women in Egypt and nearly 50% in Indonesia have experienced some type of genital cutting. Worldwide, 1 in 5 girls under the age of 12 is likely to undergo FGM in Indonesia. FGM is still practised in many of these communities because it is seen as socially accepted and because of beliefs around religion and marriageability, despite international commitments to eliminating the practice (3, 4).

FGM is an overlooked and not widely acknowledged issue in Pakistan. While the practice has only been documented in the Dawoodi Bohra community and among some marginalized groups, it has been reported that girls might be subjected to genital cutting in childhood without informed consent. A nationwide surveillance system does not exist; furthermore, epidemiological studies on the evolving landscape of FGM in Pakistan remain scarce, thus leaving the actual burden of FGM in Pakistan largely unknown (5). This absence of data limits the effectiveness of public health interventions, advocacy work that seeks to protect vulnerable girls and women, and policy development (6).

Female genital mutilation (FGM) is a harmful practice affecting millions of women worldwide and is implicated in many acute and long-term complications, including hemorrhage, infection, chronic pain, obstetric complications, and psychological disorders. Several studies from different countries showed that women who are subjected to FGM are at least three times more likely to suffer from low sexual desire, sexual arousal problems, orgasmic dysfunction, dyspareunia, and sexual satisfaction. In a recent Somali study, female sexual dysfunction was seen as a common response towards FGM and recorded in 87.6% of female respondents. Nevertheless, data on the incidence and impact of FGM in Pakistan is still remarkably sparse. In view of the lack of local data on the adverse effects of FGM on women's sexual and reproductive health, it makes scientific sense to assess the prevalence of FGM and female sexual dysfunction in the Pakistani population. This study will generate important supportive evidence that will enable healthcare professionals, policymakers, and other public health stakeholders to design interventions tailored to women and strengthen health messaging to combat this issue, with the ultimate aim of protecting women's health and rights in this region.

METHODOLOGY

This cross-sectional comparative study was conducted at the Outpatient Department (OPD) of Obstetrics and Gynecology, Shaikh Zaid Women Hospital, Larkana, after obtaining the approval of the Institutional Review Board/Ethical Review Committee of Shaikh Zaid Women Hospital, Larkana, and the approval of the research synopsis from the College of Physicians and Surgeons Pakistan (CPSP) from 10th October 2025 to 10th April 2026. It was a six-month study done after the research synopsis was approved. Study procedures were carried out in accordance with the ethical principles of the Declaration of Helsinki. All participants provided written informed consent before enrolment. Participants received information on the aims, the design, normalisation, and confidentiality. The participation was completely voluntary, and all information collected remains confidential and is to be used only for research purposes. We calculated the sample size using the World Health Organization (WHO) sample size calculator based on the findings reported by Mohamed et al., who found 87.6% of women with FGM had female sexual dysfunction (7). All women from a given region were registered for centralized referral assessment. The sample size was then calculated for a 95% confidence level and a 5% margin of error at the previously set prevalence (from the last study), so at least 280, if not more, women are needed. Non-probability consecutive sampling was used to recruit eligible participants who were presenting to the gynecology outpatient department during the study period.

We included consecutive women aged 15–49 years with gynecological complaints such as bleeding or spotting, painful vaginal discharge, itching, dyspareunia, or urinary retention for more than six hours or other irritative symptoms suggestive of genital complications. This study included only women having had confirmed Type I or Type II female genital mutilation. The sexual function data of women with Type III or Type IV FGM, rectovaginal fistula secondary to obstetric trauma, congenital genital tract anomalies with associated hematocolpos or hematometra due to vaginal septum, and women with active urinary tract infections, hepatitis, human immunodeficiency virus infection, tetanus, or genital infections without a history of FGM were excluded to avoid potential confounding factors affecting sexual function.

For this study, the definition of female genital mutilation was defined as "The partial or complete removal of the external female genitalia for non-medical purposes." FGM diagnosis and classification were made based on a detailed clinical examination by trained gynecologists. FGM was diagnosed by the absence or partial removal of the clitoris, labia minora and/or labia majora. We also determined the type of FGM based on the World Health Organization classification and classified participants into Type I and Type II.

The following were assessed as covariates: Female sexual dysfunction (FSD) was evaluated by using the Female Sexual Function Index (FSFI), a validated and internationally recognized tool for the assessment of female sexual function. The FSFI is a 19-item questionnaire that is divided into six subscales: sexual desire, arousal, lubrication, orgasm, satisfaction, and pain. Respondents were then asked to answer questions about their sexual behaviours over the previous four weeks. Domain scores were computed according to standard FSFI scoring, with an overall FSFI score then obtained (range: 2-36). Women with a total FSFI score ≤26 were considered to have female sexual dysfunction, whereas those with scores >26 were considered to have normal sexual function.

Data Collection

The data were collected using a structured, predesigned proforma developed for the study. The principal investigator then approached eligible women attending the gynecology outpatient department and screened them based on the predetermined eligibility criteria. Demographic and clinical data, including age, weight, height, body mass index

(BMI), obstetric history (parity, residential status (rural or urban), education, working status, economic status, age at FGM, type of FGM), were recorded after obtaining informed consent.

A complete medical and gynecological history was taken from every woman, and a clinical examination was then performed to establish the presence and type of female genital mutilation. Participants were then asked to complete the FSFI in a private and confidential environment. For women with little education, an interviewer-administered approach was used, with culturally relevant explanations but minimal loss of privacy that might increase reporting bias. The timing was allowed for the completion of the questionnaire, as all data collection procedures were carried out by a single individual (the principal investigator) to ensure consistency and quality control.

Data Analysis

Data were entered and analysed using IBM SPSS Statistics version 20. Quantitative variables such as age, body mass index, age at FGM, individual FSFI domain scores, and total FSFI scores were examined for normality and expressed as mean ± standard deviation or median with interquartile range, respectively, based on data distribution. Qualitative variables (residence, educational level, occupation, socioeconomic level, female genital mutilation status, type of FGM, and female sexual dysfunction status) were expressed as frequency and percentage.

Both numbers were calculated with respect to female genital mutilation among the study population. The Chi-square test or Fisher's exact test, where appropriate, was used to assess the association between the type of female genital mutilation and female sexual dysfunction. Stratified analyses were performed to control for potential effect modifiers, including age, residential status, educational level, occupation, and socioeconomic status. Chi-square testing of post-stratification was conducted as an adherence test to explore the effect of these variables on the relationship between FGM and female sexual dysfunction. Statistical significance was defined as p-value ≤0.05.

RESULTS

A total of 280 eligible women were recruited into the study. Of these 112 (40.0%) women were FGM and 168 (60.0%) women were non-FGM. Women with FGM and without aspects of baseline characteristics significantly differed. Women with FGM were more likely to reside in rural areas (76.8% vs. 50.6%, p<0.001), have lower educational achievement (p<0.001), be housewives (84.8% vs. 73.8%, p=0.014), and belong to lower socio-economic strata (73.2% vs. 49.4%, p<0.001). Mean age at the time of FGM was 7.2±2.8 years. Baseline characteristics are reported in detail in Table 1.

Table 1. Comparison of Baseline Characteristics Between Women With and Without Female Genital Mutilation (n=280)

Variable	FGM Present (n=112)	FGM Absent (n=168)	Total (n=280)	P-value
Age Group (Years)				0.021
15–24	24 (21.4)	52 (31.0)	76 (27.1)	
25–34	46 (41.1)	74 (44.0)	120 (42.9)	
35–49	42 (37.5)	42 (25.0)	84 (30.0)	
Residence				<0.001
Rural	86 (76.8)	85 (50.6)	171 (61.1)	
Urban	26 (23.2)	83 (49.4)	109 (38.9)	
Education Level				<0.001
Illiterate	48 (42.9)	39 (23.2)	87 (31.1)	
Primary–Middle	33 (29.5)	41 (24.4)	74 (26.4)	
Secondary	20 (17.9)	45 (26.8)	65 (23.2)	
Higher Education	11 (9.8)	43 (25.6)	54 (19.3)	
Occupation				0.014
Housewife	95 (84.8)	124 (73.8)	219 (78.2)	
Working	17 (15.2)	44 (26.2)	61 (21.8)	
Socioeconomic Status				<0.001
<50,000 PKR	82 (73.2)	83 (49.4)	165 (58.9)	

≥50,000 PKR	30 (26.8)	85 (50.6)	115 (41.1)	

Among the 112 women diagnosed with FGM, Type II FGM was the predominant form, observed in 66 (58.9%) women, while Type I FGM was identified in 46 (41.1%) women. The prevalence and distribution of FGM types are summarized in Figure 1.

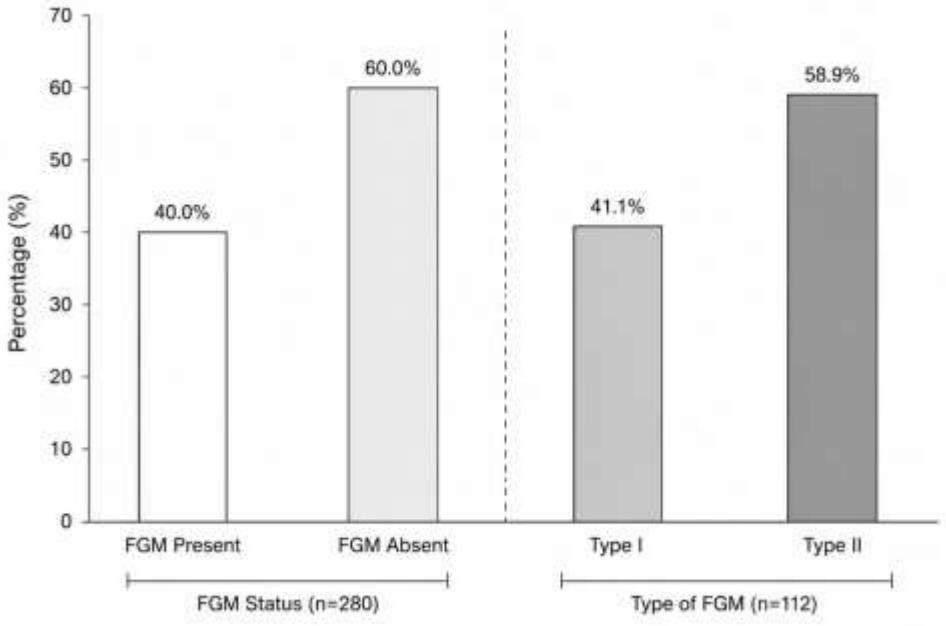

Figure 1. Prevalence and Distribution of Female Genital Mutilation Types (n=280)

Assessment of sexual function using the Female Sexual Function Index (FSFI) revealed significantly lower scores among women with FGM compared to those without FGM across all domains. The greatest differences were observed in sexual desire, arousal, orgasm, and satisfaction. Furthermore, the mean overall FSFI score was significantly lower among women with FGM (22.4±4.8) than among women without FGM (28.7±4.1), indicating substantial impairment in sexual functioning among affected women (Table 2).

Table 2. Comparison of Female Sexual Function Index Scores Between Women With and Without FGM

FSFI Domain	**FGM Present (n=112) Mean±SD**	**FGM Absent (n=168) Mean±SD**	**P-value**
Desire	3.1 ± 1.0	4.4 ± 0.9	<0.001
Arousal	3.2 ± 1.1	4.7 ± 1.0	<0.001
Lubrication	3.6 ± 1.2	4.8 ± 0.8	<0.001
Orgasm	3.0 ± 1.1	4.5 ± 0.9	<0.001
Satisfaction	3.4 ± 1.0	4.9 ± 0.8	<0.001
Pain	6.1 ± 1.8	7.4 ± 1.2	<0.001
Total FSFI Score	22.4 ± 4.8	28.7 ± 4.1	<0.001

Female sexual dysfunction (FSFI ≤26) was identified in 146 (52.1%) participants overall. The prevalence of female sexual dysfunction was significantly higher among women with FGM compared with women without FGM (87.5% vs. 28.6%, p<0.001). Women with FGM demonstrated approximately three times higher burden of sexual dysfunction than women without FGM. The association between FGM and female sexual dysfunction is shown in Figure 2.

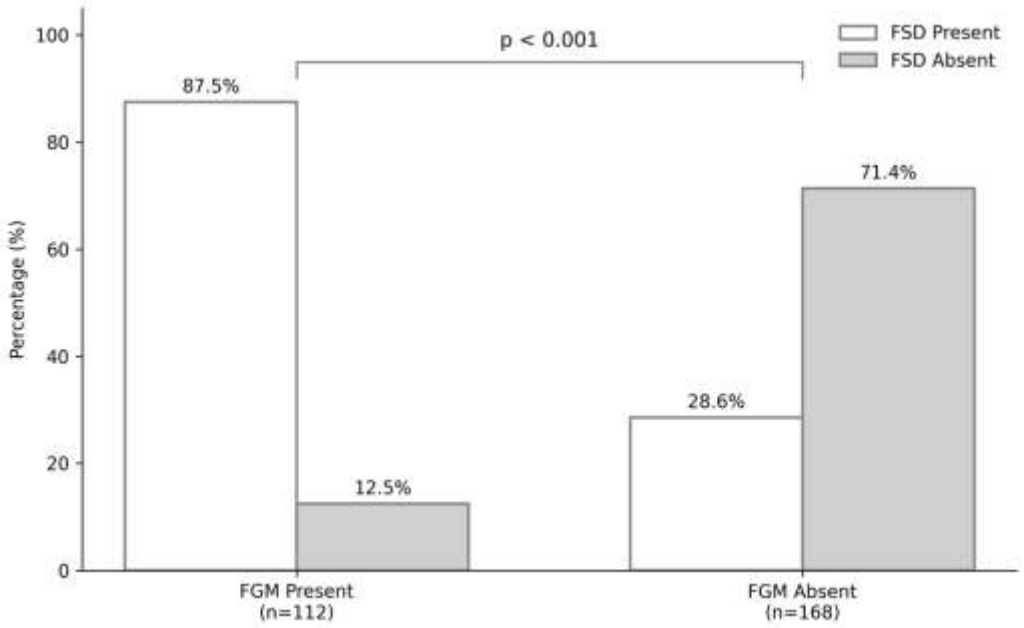

Figure 2. Association Between Female Genital Mutilation and Female Sexual Dysfunction (n=280)

Further analysis according to FGM type demonstrated that women with Type II FGM experienced significantly greater impairment in sexual function than women with Type I FGM. Female sexual dysfunction was present in 95.5% of women with Type II FGM compared with 76.1% of women with Type I FGM (p=0.003). These findings indicate a dose-response relationship between the severity of genital tissue excision and subsequent sexual dysfunction (Figure 3).

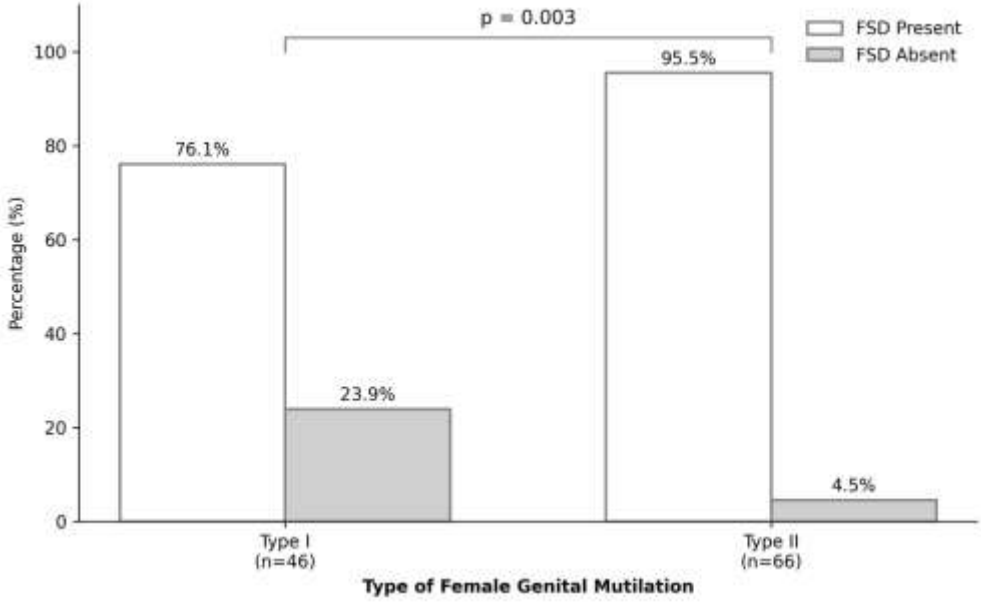

Figure 3. Association Between Type of Female Genital Mutilation and Female Sexual Dysfunction (n=112)

DISCUSSION

The primary objective of this study was to determine the prevalence of female genital mutilation (FGM) and assess its association with female sexual dysfunction (FSD) among women presenting to a tertiary care hospital. The current study noted that 40.0% of participants experienced FGM, and there was a strong association between lower FFM and female sexual dysfunction. Significantly lower sexual function scores were found in all domains of the Female Sexual Function Index (FSFI) in women with FGM, and the prevalence of FSD was significantly higher among women with FGM than in those without FGM (87.5% vs. 28.6%, p<0.001). Additionally, compared to Type I FGM, Type II FGM was significantly linked with a higher prevalence of sexual dysfunction (95.5% vs. 76.1%, respectively, p=0.003).

In the current study, the prevalence of FGM was found to be 40.0%. Prevalence estimates from Pakistan are hard to come by because this practice – confined largely to particular communities and usually done in private- is, in Pakistan, however, FGM continues to be practiced in some areas, such as by the Dawoodi Bohra community. Bootwala, in his review in 2023, noted that despite growing understanding of the negative health impacts of the procedure (8). This prevalence in the current study is lower than that found in other African countries where FGM is deeply embedded (9). International literature has reported prevalence rates over 80% in both Sudan (10) and Somalia (11), and around 72% in Egypt (12), for example, such as in Sudan and Somalia with prevalence rates over 80% and in Egypt with a prevalence of around 72%. Likewise, studies from Indonesia have shown that at least half of the girls are subjected to female genital cutting in childhood (13). The lower prevalence compared with earlier studies may be due to cultural, regional, legislative, or religious differences, and this is a hospital-based study and is not necessarily representative of communities where FGM is routinely practiced.

In the present study, women who had undergone FGM were more likely to live in a rural area (76.8% vs.50.6%, $p<0.001$), have lower levels of education, and belong to lower socioeconomic groups. Unfavourable educational status and rural residence were also consistently associated with a higher risk of undergoing FGM in previous studies conducted in developing countries (14, 15). The higher the education level, the better understanding women will have access to health information, be more aware of health complications, more prone to reject the practice, and may be one reason, which is educational attainment, can have protective benefits to practice FGM. The higher rates found among rural participants in the study may indicate that rural communities cling more tightly to time-honoured cultural practices.

An important finding of the current study was that Type II FGM comprised most of the cases (58.9%), with Type I FGM accounting for 41.1%. This finding is in accordance with the study published previously, where 32.2% of women had Type II FGM, and other more severe forms were a large part of the cases reported (16). Similarly, studies from sub-Saharan Africa have shown a predominance of Type II and more severe types of genital cutting (17). Cultural traditions, practitioner preferences, ethnic background, and local interpretations of FGM can account for differences in the distributions of FGM types across different studies.

In this study, FGM negatively influenced female sexual function. Women with FGM had significantly lower mean total FSFI score than women without FGM (22.4 ± 4.8 vs. 28.7 ± 4.1, $p < 0.001$). Moreover, women with FGM had significantly lower scores in all the sexual indices of desire, arousal, lubrication, orgasm, satisfaction, and pain domains. These findings align with those reported by Dura MC from Sudan (18), who discovered grossly lower sexual function scores in women with Type I and Type II FGM assessed in the same circumstances compared with controls. Similarly, Tammary E (19) and Fite RO (20) with FGM reported that women experienced decreased sexual desire, difficulty with arousal, resisted reaching orgasm, and were less sexually satisfied overall. Sexual function is modestly reduced post-infibulation, which is biologically plausible given the high levels of sensory innervation of the genital tissue (containing the clitoris, in particular) and therefore local sensory stimulation and sexual response following partial removal of this innervated genital tissue by FGM.

The most important finding of this study was that the prevalence of female sexual dysfunction was significantly higher in women having FGM than in women without FGM (87.5% vs. 28.6%, $p<0.001$). These findings are almost similar to the findings by Nzinga AM (21), who found that female sexual dysfunction was found in 87.6% of Somali women with FGM. Similarly, a systematic review and meta-analysis performed by Pérez-López et al. also found that women who had a history of FGM had a higher risk of having female sexual dysfunction when compared to women who were not affected by FGM (22). The extraordinary congruence between the prevalence reported by Mohamed et al. That observed in the present study may indicate this effect is similar around the world about the pathophysiological consequences of genital tissue damage, regardless of the geographic origin of the individual.

This study also observed an association between FGM severity and sexual dysfunction. Type II FGM was associated with a significantly higher rate of FSD among women with Type II FGM as compared with the Type I FGM group (95.5% vs. 76.1%, $p = 0.003$). The finding that a greater anatomical extent of genital excision was associated with greater impairment of sexual function has also been described in Iran (23) and Somalia (24). Type II FGM is the excision of more extensive amounts of genitalia, including the clitoris and labia minora, which could also justify the reduction in sexual desire, arousal, orgasmic capacity, and satisfaction noted with FGM type II women, who seem to be more affected than type I women. This study provides evidence for a dose-dependent relationship between the amount of genital injury and subsequent sexual dysfunction.

The current study adds much-needed evidence from Pakistan, where work on FGM is still very limited. Contrary to most prior African studies, this study provides local evidence that FGM continues to be practised by a large part of women population and is relevant to the high degree of sexual health impairment incurred. The results demonstrate that the long-term negative impact of FGM may not only be seen through the perspective of physical complications, but may also affect other areas of the sexual well-being of the female that extend into adult life.

The strengths of this study are the assessment of sexual function based on a validated instrument (FSFI), a standardized clinical evaluation for the classification of FGM, and the inclusion of a wide range of variables related to sociodemographic characteristics. But the study was conducted at a single tertiary care center in 2017 and used non-

probability sampling, which limits generalizability. Furthermore, the status of sexual function is indeed dependent on psychological, relational, and sociocultural factors that cannot be ruled out altogether. Still, the results do provide useful baseline data for multicenter research and public health programs to abolish FGM and limit its enduring health effects.

CONCLUSION

Female genital mutilation was identified in a substantial proportion of women presenting to the tertiary care hospital and was significantly associated with female sexual dysfunction. Women with FGM demonstrated lower sexual function scores and a markedly higher prevalence of sexual dysfunction compared with those without FGM. Moreover, Type II FGM was associated with greater impairment in sexual function than Type I FGM. These findings highlight the detrimental impact of FGM on women's sexual health and underscore the need for targeted awareness programs, community education, and preventive strategies to eliminate this harmful practice.

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