THE IMPACT OF FEMALE GENITAL MUTILATION ON THE SEXUAL FUNCTION OF WOMEN ATTENDING THE ACADEMY TEACHING HOSPITAL IN SUDAN

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AUTHORS’ CONTRIBUTIONS

This work was carried out in collaboration between all authors. Authors AEMK, RBAA and AS designed the study, wrote the protocol and interpreted the data. Authors AAS and RBAA anchored the field study, gathered the initial data and performed preliminary data analysis. Authors AEMK, RBAA and IA managed the literature searches and produced the initial draft. All authors read and approved the final manuscript.

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ABSTRACT

Background and Objectives: Female genital mutilation refers to procedures involving partial or total removal of the external female genitalia for non-medical reasons. The main objectives of this study were to determine the different types of FGM in Sudanese women, compare the sexual function among genital mutilated and non-genital mutilated women attending the Academy teaching Hospital in Khartoum state.

Methods: This was a cross sectional, comparative study that was carried out in The Academy Teaching Hospital in Khartoum during the period 1/11/2011 till 31/12/2012. 132 women were included in the study. Data was collected using The Female Sexual Function index questionnaire, Chi square test and ANOVA were used as tests of significance and P value was set at 0.05.

Results: The results showed that 81.8% of the respondents were genitally mutilated and older women were more likely to have Pharaonic type of genital mutilation with significant association between age and type of genital mutilation ($P = .007$). The study revealed that women with higher education were less likely to have genital mutilation with significant association between type of genital mutilation and level of education ($P=.001$). The study also revealed that non-genitally mutilated females were more likely to attain sexual satisfaction than Pharaonic or Sunnah genitaly mutilated females with significant association between type of genital mutilation and satisfaction ($P=.031$). As for desire, arousal, orgasm and pain there was no significant difference between the 3 groups.

Conclusion: Female genital mutilation is a cruel procedure and a cultural tradition that deprives women of sexual satisfaction, the majority of the respondents were genitally mutilated and that non-genitaly mutilated females were more likely to attain sexual satisfaction than pharaonic or Sunnah genitaly mutilated females.

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1. INTRODUCTION

Female genital mutilation (FGM), also known as female circumcision, refers to practices involving the partial or complete removal of the external female sexual organs on non-medical grounds [1].

At least 200 million girls and women in 30 countries have been subjected to FGM [2]. Prevalence of FGM ranges from 80% to 100% in Egypt, Somalia, Ethiopia, Eritrea, and Sudan; from 51% to 79% in Mali, Chad, and Liberia; 50% in Nigeria and Kenya; and 20% or less in Senegal, Tanzania, Zaire, and Uganda. As a result of immigration, FGM has also spread to Europe, Australia, and the United States, with some families having their daughters undergo the procedure while on vacation overseas [3].

As defined by the World Health Organization, there are four types of FGM: type I involves excision of the prepuce, with or without excision of part or all of the clitoris (known as Sunnah in the muslim world). Type II consists of excision of the clitoris with partial or total excision of the labia minora. Type III is the most drastic type and the one that carries the most serious complications (also known as Pharaonic circumcision) and involves excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening. Type IV also known as unclassified type includes procedures such as pricking, piercing, stretching, scraping or cauterization [4,5].

The main reasons for performing FGM are tradition, religion and social pressure [6]. In the most recent estimate carried out by the WHO in 2008, an average of between 100 and 140 million women have undergone FGM in the world and every year, 3 million female children are mutilated in Africa [7].

FGM is a traumatic procedure that has no health benefits and the complications range from bleeding, infection and rarely death [8]. More than 168,000 women in the United States have either undergone or are at risk for undergoing this procedure. An estimated 20,000 African refugees enter the United States each year, 8% from countries where FGM is a common practice. Immigration of affected refugees to Europe is also increasingly common [2].

FGM affects the sexual function adversely and women who have undergone FGM have a significantly lower quality of life score than those who have not [9]. Little is documented about the psychosexual and psychological sequelae of FGM and the effects on satisfaction and sexual function have been poorly reported [10].

Two types of FGM are practiced in Sudan, type I (Sunnah) and type II (Pharaonic), There is no evidence of previous studies done in Sudan using the FSFI (Female Sexual Function index) questionnaire to compare the sexual function among genital mutilated and non-genital mutilated women. However a study done in Saudi Arabia on 107 Sudanese women in Jeddah showed that a substantial proportion of women subjected to FGM experienced sexual dysfunction and that the anatomical extent of FGM is related to the severity of sexual dysfunction [11]. Another similar study that was done among immigrant women in Italy showed significant differences between group of study and an equivalent group of control in desire, arousal, orgasm, and satisfaction with mean scores higher in the group of mutilated women [12].

The main objectives of this study were to determine the different types of FGM in Sudanese women, compare the sexual function among genital mutilated and non-genital mutilated women attending the Academy teaching Hospital in Khartoum state, also to know the type of genital mutilation according to age, parity and level of education.

2. MATERIALS AND METHODS

This was a cross sectional, comparative study that was carried out in The Academy Teaching Hospital which is a charity teaching hospital that provides service for rural and urban parts of Khartoum state and mainly linked to the University of Medical Sciences and Technology. The study was carried out during the period 1/11/2011 till 31/12/2012.

All married women attending the outpatient clinic for different complaints during the study period were recruited to participate in the study. The study population consists of two groups: genitally mutilated and non- genitally mutilated women. Married women whose age ranged from 15 and above and who were not pregnant were included in the study. Exclusion criteria included those with other gynecological problems, chronic diseases and pregnant women. 132 women were included in the study. Data was collected by convenient sampling, the study included different dependent and independent variables described in the study questionnaire like age, genitally mutilated or non-genitally mutilated, parity, level of education, desire, lubrication, arousal, climax, satisfaction and pain. FGM was determined by self-reporting by the women included in the study and no genital examination was performed.
Tools of data collection included The Female Sexual Function index questionnaire (FSFI) a 19-item questionnaire which is a multidimensional self-report instrument for assessing the key dimensions of sexual function in women. It provides scores on six domains of sexual function (desire, arousal, lubrication, orgasm, satisfaction, and pain) as well as a total score. The FSFI has been validated on clinically diagnosed samples of women with female sexual arousal disorder (FSAD), female orgasmic disorder (FOD), and hypoactive sexual desire disorder (HSDD) [13].

Chi square test was used to determine the association between type of genital mutilation and the other independent variables like age, parity and level of education. ANOVA was used to test the difference between means between the three types of genital mutilation (Sunnah, Pharaonic and non-genitally mutilated) and the 5 phases of female sexual functions. $P$ value was set on an alpha level at 0.05.

Each questionnaire was filled in by the researcher during the interview with the participants. Ethical clearance and approval for conducting this study was obtained from the hospital administration. Prior informed consent was obtained from individual subjects with full explanation of the study. Each patient was interviewed privately.

3. RESULTS

132 women who met the inclusion criteria were recruited to participate in this study. 108 (81.8%) of the total number of the respondents were genitally mutilated, out of these 44(33.3%) had Sunnah type and 64(48.5%) had Pharaonic type. Only 24(18.2%) were non-genitally mutilated Table 1.

<table>
<thead>
<tr>
<th>Type of circumcision</th>
<th>0 – 2</th>
<th>3 – 4</th>
<th>4 - 6</th>
<th>&gt;6</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharonic</td>
<td>28</td>
<td>56.0%</td>
<td>22</td>
<td>40.7%</td>
</tr>
<tr>
<td>Sunna</td>
<td>12</td>
<td>24.0%</td>
<td>24</td>
<td>44.4%</td>
</tr>
<tr>
<td>Non – genitally mutilated</td>
<td>10</td>
<td>20.0%</td>
<td>8</td>
<td>14.8%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0%</td>
<td>54</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Table 4. Type of genital mutilation * education level

<table>
<thead>
<tr>
<th></th>
<th>Illiterate</th>
<th>Primary</th>
<th>Secondary</th>
<th>College</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharaonic</td>
<td>8</td>
<td>12</td>
<td>32</td>
<td>12</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>12.5%</td>
<td>18.8%</td>
<td>50.0%</td>
<td>18.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Sunnah</td>
<td>4</td>
<td>22</td>
<td>10</td>
<td>8</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
<td>50.0%</td>
<td>22.7%</td>
<td>18.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Non – genitally mutilated</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>33.3%</td>
<td>33.3%</td>
<td>16.7%</td>
<td>16.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
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<td>42</td>
<td>46</td>
<td>24</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>15.2%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

* P-value = 0.001

The study revealed that older women (36–45 years) were more likely to have Pharaonic type of genital mutilation, only 2 (4.8%) of all women in the age group (36 – 45) years were non-genitally mutilated and there was significant association between age and type of genital mutilation (P = .007). Table 2. Classification of the study subjects according to type of genital mutilation and parity showed that all women with parity >6 were genitally mutilated and there was no significant association between type of genital mutilation and parity Table 3.

Classification of the study subjects according to type of genital mutilation and their level of education showed that women with level of college education or higher were less likely to have genital mutilation compared with those with pharaonic or Sunna type. 12(60%) of those who were illiterate were genitally mutilated and 34(81%) of those who received primary school education were genitally mutilated. The study revealed significant association between type of genital mutilation and level of education (P=.001) Table 4.

When tests of significance of differences between means were applied (ANOVA) between the three types of genital mutilation (Sunnah, Pharaonic and non-genitally mutilated) and the 5 phases of female sexual functions, it was noticed that Lubrication was found to be associated with non-genital mutilation. Non-genitally mutilated females were more likely to experience lubrication than pharaonic or Sunnah genitaly mutilated females (P=.004).

The study also revealed that non-genitally mutilated females were more likely to attain sexual satisfaction than pharaonic or Sunnah genitaly mutilated females with significant association between type of genital mutilation and satisfaction (P=.031). As for desire, arousal, orgasm and pain there was no significant difference between the 3 groups.

4. DISCUSSION

FGM was practiced as early as 450 BCE and was widely performed throughout ancient Egypt and in many other societies and cultures [14]. The present study revealed that the majority of the respondents were genitally mutilated and that non-genitally mutilated females were more likely to attain sexual satisfaction than pharaonic or Sunnah genitaly mutilated females.

Out of 132 women included in the study, 81.8% were genitaly mutilated, this is slightly higher than recent reports from Ethiopia (78.5%) and Burkina Faso (76.1%) [15,16] which might indicate that FGM is still practiced in Sudan despite the fact that it is prohibited by law. The study revealed that only two types of genital mutilation are practiced in Sudan Pharaonic type (48.5%) and Sunnah type (33.3%) which is different from the findings in Ethiopia and Nigeria where the most prevalent form of FGM was type II [15,17]. These differences in the type of circumcision might be due to local religious, social and cultural factors.

The study revealed that older women were more likely to have genital mutilation especially type III, which is comparable to the Ethiopian study where older women were more likely to report themselves having undergone FGM [15]. Interestingly, the study conducted in Mauritania showed that older women (ages 45–49 years old) were less likely to report experiencing FGM compared to women 15–19 years old [18]. This difference could be due to cultural variation in reporting this practice.
The present study revealed that there was significant association between education and FGM where women with higher level of education were less likely to be. This finding was in line with a study conducted in Iran [19]. This finding was also reported by kandala et al. [20] which emphasizes that education and family educational background has a great impact on decision making regarding FGM.

Previous studies have shown that FGM adversely affects sexual function. Alsibiani and Rouzi demonstrated in their study of 260 women, half of whom had undergone FGM, and half of whom were controls; a statistically significant reduction in the overall Female Sexual Function Index score for the FGM group [10]. Our study demonstrated that non-genitally mutilated females were more likely to attain sexual satisfaction than genetically mutilated females with significant association between type of circumcision and satisfaction ($P=0.031$). The results of this research were similar to those of Alariqi in Yemen who found that 24% of Yemeni females were genitally mutilated and dissatisfaction of sexual relationship in them was more than females who did not have FGM [21].

Interestingly enough and contrary to the previous findings, in a study by Catania et al. [12], 57 women with type III FGM reported higher scores than controls in several domains of the Female Sexual Function Index, but this study was confounded by the control group consisting mostly of western women (54 of 57).

Our study showed that Lubrication was associated with non–genital mutilation as non-genitally mutilated females were more likely to experience lubrication than genitally mutilated females, this is quite similar to the Saudi study where there was significant difference between the FGM group and control group with regards to lubrication when the FSFI score was used [10].

The present study didn’t show any significant differences between genitally mutilated and non-genitally mutilated women with regards to desire, arousal, orgasm and pain, the lack of significant differences may be explained by the fact that most of the women in Sudan are culturally bound to hide these experiences.

### 5. CONCLUSION

FGM is still practiced in Sudan. The present study revealed that the majority of the respondents were genitally mutilated and that non-genitally mutilated females were more likely to attain sexual satisfaction than pharaonic or Sunnah genitally mutilated females. Our data indicated that Lubrication was associated with non–genital mutilation but no significant differences between genitally mutilated and non-genitally mutilated women with regards to desire, arousal, orgasm and pain. The media have raised awareness of FGM in recent years, and many groups and campaigners are making significant progress.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

### REFERENCES


