



## Evaluation of Psychological and Sexual Effects of Female Genital Mutilation (Circumcision)

Amal Kotb Abdallah<sup>a</sup>, Hamada Ashry Abd El Wahed<sup>a</sup>, Ahmed Abd Elaziz Ezzat<sup>b</sup>, Heba Ahmed Ibrahim Khalifa<sup>a</sup>

<sup>a</sup>Obstetrics and Gynecology Department, Faculty of Medicine, Beni-Suef University, Egypt

<sup>b</sup>Psychiatry Department, Faculty of Medicine, Beni-Suef University, Egypt

### Abstract :

The aim of the present study is to evaluate sexual and psychological effects of female genital mutilation. This was a case control and comparative study that was conducted at obstetrics and gynecology outpatient clinic at Beni-Suef University Hospital, Beni-Suef, Egypt. This study included 96 sexually active females who were classified into two groups: Group (1): Included 48 sexually active who were subjected to FGM/C, and Group (2): Included 48 sexually active who weren't subjected to FGM/C. The females within the two groups showed significant difference in their satisfaction with the process and subsequently in their future decision in performing circumcision for their daughters. We concluded that Female genital mutilation (FGM) is still common in Egypt inspite of efforts for panning of the process. Female genital mutilation (FGM) didn't reveal a significant effect on the development of anxiety and depression.

**Keywords:** Psychological Effects; Sexual Effects; Female Genital Mutilation; Circumcision

### 1. Introduction:

Female genital mutilation (FGM) also known as female genital cutting (FGC), female circumcision, or female genital mutilation/cutting (FGM/C), is defined by the World Health Organization as all procedures that involve partial or total removal of the external female genitalia, or other injury to the

female genital organs for non-medical reasons [1]. According to the WHO, about 100-140 million girls and women worldwide are currently living with the consequences of FGM. In Africa an estimated 91.5 million girls and women aged 9 years and above have

undergone the procedure and about three million girls are at risk for it annually [2].

FGM is performed largely by traditional practitioners (traditional circumcisers and traditional birth attendants) and worrisomely and increasingly by health professionals mainly doctors and nurses/midwives [1].

According to a 2013 UNICEF report covering 29 countries in Africa and the Middle East, Egypt has the highest total number of women that have undergone FGM (27.2 million) in the region, while the highest percentage (prevalence) of FGM was in Somalia (98%) [3].

The practice of FC is deeply rooted in Egypt because of religious, social, and cultural backgrounds. Despite the fact that FGM has been banned by law in Egypt with heavy fines and even jail as a penalty, the practice has continued, especially in Upper Egypt and rural communities [4]. Throughout the past 2 decades, many activists, policy makers, feminists, and religious men participated in anti-FC awareness programs and campaigns, but the effectiveness of those activities needs to be evaluated [4].

FGM harms women's physical health throughout their lives [5]. Circumcised women have reported several sexual problems including a reduction in all her sexual cycle as sexual desire, arousal, excitement, orgasm, and dyspareunia at varying levels [6].

The psychosocial consequences include post-traumatic stress disorder (PTSD), anxiety

disorders, panic disorders, depression and suppression of feeling and thinking, and sometimes attempted suicide [2].

These effects are due to psychological trauma of the painful procedure, sense of humiliation and being cheated by parents, use of physical force by those performing the procedure, negative genital image, lack of sense of ownership of their bodies, destructive sexual life, and infertility [7].

The aim of the present study is to evaluate sexual and psychological effects of female genital mutilation.

## **2. Patients and Methods:**

This was a case control and comparative study that was conducted at Obstetrics and gynecology outpatient clinic at Beni-Suef University hospital, Beni-Suef, Egypt. This study included 96 sexually active females who were classified into two groups: Group (1): Included 48 sexually active who were subjected to FGM/C, and Group (2): Included 48 sexually active who weren't subjected to FGM/C.

### **2.1 Inclusion criteria:**

1. Being in a sexual availability state (living with her husband) during last 6 months.
2. Female are ranged from 18 to 50 years.
3. No history of husband sexual dysfunction (Premature Ejaculation, Erectile Dysfunction).
4. FGM has done for non-medical cause.

## **2.2 Exclusion criteria:**

1. Systemic disease that may cause sexual dysfunction.
2. Severe illness and debilitating disease.
3. Any known psychiatric illness.
4. Pregnant female.

**2.3 Patients consent:** A written informed consent was obtained from all participants before inclusion in the study, explaining the value of the study, plus the procedures that was conducted.

## **2.4 All patients were subjected to:**

- 1. History taking:** Demographic characteristics, including age, age of marriage, number of children, use of contraception, educational level (primary, prep, secondary school or university degree) were assessed in all women. Risk factors including chronic illness. Our study also included data pertaining to the age at time of FGM/C, who performed the FGM/C (physicians or not), their attitude or satisfaction towards FGM/C (agree/disagree) their decision about doing FGM/C for their daughter.
- 2. Clinical examination:** Clinical examination was done to exclude any systemic or debilitating disease, and exclude any psychological illness.
- 3. Assessment of female sexual function:** Female sexuality was assessed in our study by: Arabic translated version of

(Female Sexual Function Index) **FSFI** questionnaire which is a brief, multidimensional, validated tool for assessment of FSF during sexual activity [8].

According to the FSFI, 19-item questionnaire sexual function domains consisted of: sexual desire, arousal, lubrication, orgasm, satisfaction and pain during sexual activity/intercourse. For each of the 19 questions there were 5 possible answers, a full explanation of each question and its 5 possible answers was done and cases answers were reported as they said. The score (0-5) was calculated. Identifying the sexual dysfunction according to total score of FSFI (cutoff point = 26.55)

## **4. Assessment of psychological function:**

- A. Anxiety** was assessed by using Thompson Anxiety Rating Scale HAM-A [9], and it was translated into Arabic [10].
- B. Depression: Beck Depression Inventory-II (BDI-II):** The Beck Depression Inventory-II (BDI-II) developed in 1996 [11]. It was translated into Arabic and validated by Fawzi et al. [12].
- C. Post-Traumatic Stress Disorder: Post-Traumatic Stress Disorder** was assessed by **Davidson Trauma Scale-DSM-IV:** DSM is self-rating scale for assessing the frequency of post-traumatic stress disorder symptoms. Items in this scale

measure the 17 PTSD symptoms found in DSM-IV.

### 2.5 Statistical analysis:

The collected data were coded, processed and analyzed using the SPSS (Statistical Package for Social Sciences) version 22 for Windows® (IBM SPSS Inc, Chicago, IL, USA). Data were tested for normal distribution using the Shapiro Walk test. Qualitative data were represented as frequencies and relative percentages. Chi square test ( $\chi^2$ ) and Fisher exact was used to calculate difference between qualitative variables as indicated. Quantitative data were expressed as mean  $\pm$  SD (Standard

deviation). Independent samples t-test was used to compare between two independent groups of normally distributed variables (parametric data) while Mann Whitney U test was used for non-normally distributed Data (non-parametric data). P value < 0.05 was considered significant.

### 3. Results:

The study included total number of 96 females that were classified into equal two groups; group 1 that included 48 females who underwent FGM and group 2 that included 48 females without FGM.

**Table (1):** Comparison and analysis of demographic data, medical and gynaecological history between the two groups included in the study:

	<b>Group 1 (With FGM) (N=48)</b>		<b>Group 2 (Without FGM) (N=48)</b>		<b>Test of significance</b>	<b>P</b>
<b>Age group</b>						
<b>20-29 years</b>	34	70.8%	42	87.5%	$\chi^2= 4.842$	0.089
<b>30-39 years</b>	12	25%	4	8.3%		
<b>≥ 40 years</b>	2	4.2%	2	4.2%		
<b>Education Level</b>						
<b>Basic level</b>	19	39.6%	12	25%	$\chi^2= 2.344$	0.310
<b>Secondary</b>	19	39.6%	24	50%		
<b>University or higher</b>	10	20.8%	12	25%		
<b>Associated chronic disease</b>						
<b>No</b>	43	89.6%	44	91.7%	$\chi^2= 1.047$	0.489
<b>Yes</b>	5	10.4%	4	8.3%		
<b>Use of contraception</b>						

<b>No</b>	21	43.8%	24	50%	$\chi^2= 0.376$	0.539
<b>Yes</b>	27	56.2%	24	50%		
<b>Method of Contraception</b>						
<b>IUD</b>	18	66.7%	13	54.2%	$\chi^2= 6.573$	0.031*
<b>Hormonal</b>	8	29.6%	3	12.5%		
<b>Condom</b>	0	0%	5	20.8%		
<b>other</b>	1	3.7%	3	12.5%		

$\chi^2$  : Chi square test, P: probability

\*: statistically significant difference ( $p < 0.05$ )

**Table (1)** shows comparison between the two groups according to the previously discussed factors. There was no statistically significant difference regarding the age group distribution (P value is 0.089). There was no statistically significant difference regarding the level of education between the two groups (P value is 0.310). There was no statistically significant difference between the two groups as regarding the associated chronic diseases and the use of contraception (P value is 0.489 and 0.539 respectively). However, there was significant difference between the two groups as regarding the method of contraception used (P value is 0.031).

**Table (2):** Analysis of the females' respond for circumcision in the two groups included in the study:

	<b>Group 1 (With FGM) (N=48)</b>		<b>Group 2 (Without FGM) (N=48)</b>		<b>Test of significance</b>	<b>P</b>
<b>Satisfaction about circumcision</b>						
<b>No</b>	27	56.2%	42	87.5%	$\chi^2=11.594$	0.001*
<b>Yes</b>	21	43.8%	6	12.5%		
<b>Doing circumcision for daughters</b>						
<b>No</b>	25	52.1%	38	79.2%	$\chi^2= 7.923$	0.034*
<b>Yes</b>	6	12.5%	2	4.2%		
<b>May be</b>	17	35.4%	8	16.7%		

$\chi^2$  : Chi square test, P: probability

\*: statistically significant difference ( $p < 0.05$ )

**Table (2)** shows there also was very high level of significance between the two groups with their agreement of the act of circumcision being more satisfied in the group 1 ( $P = 0.001$ ). However, in this group the number of females who didn't agree with circumcision was higher than the number of females who did agree (27 and 21 respectively). There was a statistically significant difference between the two groups as regarding their decision in performing circumcision for their daughters ( $P = 0.034$ ).

**Table (3):** Comparison and analysis of the items of Female Sexual Function Index between the two groups included in the study

Demographic data	Group 1 (With FGM) (N=48)	Group 2 (Without FGM) (N=48)	Test of significance	P-value
Desire	4.15 ± 1.31	4.34 ± 1.37	t= -0.648	0.495
Arousal	4.40 ± 1.19	4.67 ± 1.06	t= -1.170	0.245
Lubrication	4.50 ± 0.98	4.91 ± 0.91	t= -2.127	0.035*
Orgasm	4.46 ± 1.16	4.88 ± 1.15	t= -2.341	0.027*
Satisfaction	4.86 ± 1.27	5.04 ± 1.25	t= -0.706	0.482
Pain	4.46 ± 1.23	4.31 ± 1.31	t= 0.565	0.574

t: student t-test

P: probability,

\*: statistically significant difference ( $p < 0.05$ )

Analysis of the sexual function between the two groups by using female sexual function index (FSFI) is shown in table (3). The score of all domains in the FSFI also show no significant difference between the two groups except for lubrication that is significantly higher in group 2 (P value is 0.035) and orgasm (P value is 0.027)

**Table (4):** Comparison and analysis of the total score of Female Sexual Function Index between the two groups included in the study

Demographic data	Group 1 (With FGM) (N=48)	Group 2 (Without FGM) (N=48)	Test of significance	P-value
Total score	26.83 ± 5.57	27.98 ± 5.21	t= -1.037	0.303
Defective	21 (43.8%)	16 (33.3%)	$\chi^2 = 3.456$	0.068
Not defective	27 (56.2%)	32 (66.7%)		

t: student t-test,

$\chi^2$ : Chi square test,

P: probability,

As shown in table (4). The total FSFI score in group 1 is  $(26.83 \pm 5.57)$  and the total score in group 2 was  $(27.98 \pm 5.21)$  with no significant difference between the two groups (P value is 0.303). There were 43.8% in group 1 with defective sexual functions while there were 33.3% in group 2.

**Table (5):** Comparison and analysis of the items of Anxiety Thompson Score, Depression Beck Score and percentage of females with positive response at PTSD in the two groups included in the study

Demographic data	Group 1 (With FGM) (N=48)	Group 2 (Without FGM) (N=48)	Test of significance	P-value
Anxiety Thompson Score	11 (1-50)	1 (12-37)	$z = -0.801$	0.423
Depression Beck Score	15 (2-64)	16 (3-52)	$z = -1.170$	0.245
Females with positive response at PTSD	15 (31.2%)	NA		

$z$ : Mann Whitney U test

P: probability

Concerning the psychiatric analysis of the two groups using Anxiety Thompson score and Depression Beck score is shown in **table (5)**. NO statistically significant difference between the two groups in the two scores (P value is 0.423 and 0.245) respectively. Among the 48 females in group 1 (with FGM) who were screened for PTSD, 15 of them had symptoms with a percentage of 31.2%.

#### 4. Discussion:

In our study the mean age was 22.85 years and 79.2% of the females were at the age of twenties, 16.7% were at the age of thirties and 4.2 % were at the age of forties.

This came in agreement with Ali et al. [4] who showed that the mean age of the participants in the study was 22.5 years with nearly 75% of them are within the age of twenties.

Other studies reported higher mean ages of participants in the study like AlQuaiz et al.

[13] who reported the median age of participants was 36 years with the range from 23 to 49 years. Also, the mean age of females with FGM was  $32.68 \pm 10.35$  years (range 18–43) compared to  $31.71 \pm 8.58$  (range 19–43) years in the control group as revealed in the results of a study by Ismail et al. [14].

The median age of circumcision was 10 years with minimum age at birth and maximum age for performing circumcision was 16 years.

Another study reported the same mean age for performing FGM ( $12 \pm 2.3$ ) years old [7].

In the current study, non-medical staff have performed circumcision for 22 females while medical staff have performed circumcision for 26 years.

This agreed with Ali et al. [4] who showed that 58% of the females with FGM were performed by physicians while 42% of them performed by midwives.

This was also supported by the results reported by Ismail et al. [14] as nearly half of FGM cases in their study (49.7%) were performed by physicians. This also came in accordance with the results reported by Obaid [15].

In the current study, there also was very high level of significance between the two groups with their agreement of the act of circumcision being more satisfied in the group 1 ( $P = 0.001$ ). However, in this group the number of females who didn't agree with circumcision was higher than the number of females who did agree (27 and 21 respectively). There was a statistically significant difference between the two groups as regarding their decision in performing circumcision for their daughters ( $P = 0.034$ ).

This was supported by the results reported in the study of Ali et al. [4] who reported that there was a highly significant difference between the participants within the two groups in their agreement with the process of FGM/C ( $p < 0.0001$ ), This might be the cause that affected their decisions in performing FGM/C

to their daughters in the future that also revealed highly significant difference between the two groups ( $p = 0.003$ ).

The results of our work came in opposite to those reported by Biglu [16] who showed that 52.6% of cases of females with FGM were convinced with this practice. Moreover, 46 % actually redid it or plan to do it for their daughters. In addition to that, the study conducted in Switzerland on the African immigrants revealed that 75% of female who had FGM were satisfied with the process without further illustration of the aspects of these satisfaction [17].

In the current work each participant completed a version of the Female Sexual Function Index (FSFI) questionnaire translated into Arabic to assess their satisfaction with their sexual activity.

Also, in this study, the score of all domains in the FSFI also show no significant difference between the two groups except for lubrication that is significantly higher in group 2 ( $P$  value is 0.035) and orgasm ( $P$  value is 0.027). The total FSFI score in group 1 is ( $26.83 \pm 5.57$ ) and the total score in group 2 was ( $27.98 \pm 5.21$ ) with no significant difference between the two groups ( $P$  value is 0.303). There were 43.8% in group 1 with defective sexual functions while there were 33.3% in group 2.

The absence of significant difference in this study could be due to the low number of females recruited within each group in the

study. Most of studies recruited larger number. Another reason for absence of significant difference is shame among females and inability to express their opinions about circumcision freely.

Our results came in accordance with Ali et al. [4] who showed that there was no statistically significant difference in sexual quality of life scores between women who have undergone FGM and those who have not with the FGM women as illustrated by the total FSFI score. When the individual items of the FSFI were compared between the two groups, no significant difference were detected between them in desire, arousal, orgasm, satisfaction and pain during the sexual intercourse. The only item that showed significant difference between the two groups was the lubrication during the sexual act.

Furthermore, in agreement with the results of our study, it has been revealed that there is no difference in the total FSFI score between the cases and control groups in the results of a study performed by Ismail et al. [18]. They have assumed that it happened because a smaller clitoris could be associated with an improved perception of the genitals and gender identity in some women, resulting in better sexual function.

On the contrary of the results of this current study, the results of a study conducted by Biglu [16] showed a significant association between FGM and female sexual function, where reduction of all individual FSFI domain

scores (namely desire, arousal, lubrication, orgasm, satisfaction and pain). The total score of female sexual function for cases was significantly lower than their control ( $14.3 \pm 5.93$  for cases versus  $25.9 \pm 3.44$  for control) ( $P = 0.000$ ). This decline is also manifested by the decreased frequency of sexual intercourse in cases compared to control.

Biglu et al. [19] also proved that the total scores for circumcised women was significantly lower than control women ( $17.9 \pm 5.39$  versus  $25.3 \pm 4.34$  respectively,  $p = 0.000$ ). Also, Anis et al. [8] found that women with FGM/C had significantly lower scores on all domains except pain.

In our study there was no statistically significant difference between the two groups in the two scores ( $P$  value is 0.423 and 0.245) respectively. Among the 48 females in group 1 (with FGM) who were screened for PTSD, 15 of them had symptoms with a percentage of 31.2%.

Within the same context, Ali et al. [4] revealed no statistically significant difference between the females within the case and control group ( $P$  value is 0.376 and 0.715). Also, about 19% of the participants within group 1 showed positive response in PTSD.

In contrast to our results, Ahmed et al. [20] performed a study to assess the effects of FGM on the long-term psychological consequences of the participant females. Psychological health data analysis revealed that FGM girls

had significantly higher scores for somatisation ( $33.5 \pm 3.7$  vs.  $20.6 \pm 4.2$ ), depression ( $31.7 \pm 3.3$  vs.  $26.3 \pm 4.9$ ), anxiety ( $32.1 \pm 3.1$  vs.  $21.2 \pm 3.8$ ), phobic anxiety ( $20.4 \pm 5.6$  vs.  $14.6 \pm 1.4$ ) and hostility ( $19.6 \pm 5.4$  vs.  $16.4 \pm 2.8$ ) than those in the non-FGM group.

Also, Ahmed et al. [20] study there was significant differences in the three global indices between the FGM and non-FGM study groups, respectively (GSI 19.3% vs. 7.2%, PSDI 16.3% vs. 4.3% and PST 17.0% vs. 5.8%). And these results were revealed after exclusion of other factors that might affect the psychological outcomes like educational level, place of residence, economic level, parents' educational level and religion.

These results came in agreement with those of Lever [21], who found a significantly higher prevalence of depression disorder (33.6%), anxiety disorder (45.6%) among Kurdish girls in northern Iraq who had undergone FGM compared with a non-FGM group.

An Egyptian study conducted in Benha University Hospital by Obaid and Amer [15], assessing the impact of FGM on the health of newly married women, demonstrated that FGM women had significant mental problems regarding somatisation, anxiety and phobic anxiety; however, FGM had no significant effect on depression and hostility. Their study population was generally older than our study population, which may explain the differences.

The current study had some limitations, first, the sample size was relatively small; and not all the demographic variables were in greater detail than what is typically available clinically, such data would allow more in-depth analyses of potential predictors of QOL.

## **5. Conclusions:**

Female genital mutilation (FGM) is still common in Egypt in spite of efforts for banning of the process. The experience of a previous circumcision as a bad experience has affected the decision of females regarding the satisfaction with the process and their future decision to perform the process for their daughters. Female genital mutilation (FGM) didn't affect the overall sexual functions as assessed by Female Sexual Function Index (FSFI) questionnaire except for the lubrication and orgasm domains. Female genital mutilation (FGM) didn't reveal a significant effect on the development of anxiety and depression.

## **6. References:**

1. Ismail, S. A., Abbas, A. M., Habib, D., Morsy, H., Saleh, M. A., & Bahloul, M. (2017). Effect of female genital mutilation/cutting; types I and II on sexual function: case-controlled study. *Reproductive health*, 14(1), 1-6.
2. Chinawa, A. T., Chinawa, J. M., Ossai, E. N., Aronu, A. E., Ozokoli, G. E., & Enebe, J. (2021). Pattern of Female Genital Mutilation among Adolescents Attending

- Secondary Schools' in Enugu Metropolis. *Journal of Tropical Pediatrics*, 67(1), fmaa103.
3. Obaid, Z. M., Amer, A. W. A., El Mahdy, M. A. F., & Mohammed, A. E. B. (2019). Evaluation of psychological and sexual effects of female genital mutilation (Circumcision). *The Egyptian Journal of Hospital Medicine*, 74(4), 726-734.
  4. Ali, H. A. A. E. W., Arafa, A. E., Abd Allah, N. A. E. F., & Fahim, A. S. (2018). Prevalence of female circumcision among young women in Beni-Suef, Egypt: a cross-sectional study. *Journal of Pediatric and Adolescent Gynecology*, 31(6), 571-574.
  5. Biglu, M.-H. , Farnam, A. and Abotalebi, P. (2017). Impact of Women Circumcision on Mental Health. *International Journal of Psychological and Brain Sciences*, 2(4), 100-105 .
  6. De Schrijver, L. , Leye, E. and Merckx, M. (2016). A multidisciplinary approach to clitoral reconstruction after female genital mutilation: the crucial role of counselling. *The European Journal of Contraception & Reproductive Health Care*, 21(4), 269-275 .
  7. Elnashar, A. and Abdelhady, R. (2007). The impact of female genital cutting on health of newly married women. *International Journal of Gynecology & Obstetrics*, 97(3), 238-244 .
  8. Odukogbe, A. T. A., Afolabi, B. B., Bello, O. O., & Adeyanju, A. S. (2017). Female genital mutilation/cutting in Africa. *Translational andrology and urology*, 6(2), 138. .
  9. Sayed Ahmed, W. A., Kishk, E. A., Farhan, R. I., & Khamees, R. E. (2017). Female sexual function following different degrees of perineal tears. *International Urogynecology Journal*, 28(6), 917-921.
  10. Thompson, E. (2015). Hamilton rating scale for anxiety (HAM-A). *Occup Med (Lond)*, 65(7), 601. .
  11. Saade, S., Hallit, S., Haddad, C., Hallit, R., Akel, M., Honein, K., ... & Obeid, S. (2019). Factors associated with restrained eating and validation of the Arabic version of the restrained eating scale among an adult representative sample of the Lebanese population: a cross-sectional study. *Journal of eating disorders*, 7(1), 1-13.
  12. Wang, Y. P., & Gorenstein, C. (2013). Psychometric properties of the Beck Depression Inventory-II: a comprehensive review. *Brazilian Journal of Psychiatry*, 35, 416-431.
  13. Fawzi, M., & Fawzi, M. (2018). Validation of an Arabic version of the Yale Food Addiction Scale 2.0. *Eastern Mediterranean Health Journal*, 24(8).

13. AlQuaiz, A. M., Kazi, A., Fouda, M., & Alyousefi, N. (2018). Age and gender differences in the prevalence and correlates of vitamin D deficiency. *Archives of osteoporosis*, 13(1), 1-11.
14. Ismail, S. A., Abbas, A. M., Habib, D., Morsy, H., Saleh, M. A., & Bahloul, M. (2017). Effect of female genital mutilation/cutting; types I and II on sexual function: case-controlled study. *Reproductive health*, 14(1), 1-6.
15. Obaid, Z. M., Amer, A. W. A., El Mahdy, M. A. F., & Mohammed, A. E. B. (2019). Evaluation of psychological and sexual effects of female genital mutilation (Circumcision). *The Egyptian Journal of Hospital Medicine*, 74(4), 726-734.
16. Biglu, M. H., Farnam, A., Abotalebi, P., Biglu, S., & Ghavami, M. (2016). Effect of female genital mutilation/cutting on sexual functions. *Sexual & Reproductive Healthcare*, 10, 3-8.
17. Johnsdotter, S. (2018). The impact of migration on attitudes to female genital cutting and experiences of sexual dysfunction among migrant women with FGC. *Current sexual health reports*, 10(1), 18-24.
18. Holmberg, M., Arver, S., & Dhejne, C. (2019). Supporting sexuality and improving sexual function in transgender persons. *Nature Reviews Urology*, 16(2), 121-139.
19. Rouzi, A. A., Berg, R. C., Sahly, N., Alkafy, S., Alzaban, F., & Abduljabbar, H. (2017). Effects of female genital mutilation/cutting on the sexual function of Sudanese women: a cross-sectional study. *American journal of obstetrics and gynecology*, 217(1), 62-e1.
20. Ahmed, M. R., Shaaban, M. M., Meky, H. K., Amin Arafa, M. E., Mohamed, T. Y., Gharib, W. F., & Ahmed, A. B. (2017). Psychological impact of female genital mutilation among adolescent Egyptian girls: a cross-sectional study. *The European Journal of Contraception & Reproductive Health Care*, 22(4), 280-285.
21. Lever, H., Ottenheimer, D., Teysir, J., Singer, E., & Atkinson, H. G. (2019). Depression, anxiety, post-traumatic stress disorder and a history of pervasive gender-based violence among women asylum seekers who have undergone female genital mutilation/cutting: a retrospective case review. *Journal of immigrant and minority health*, 21(3), 483-489.