Original Article

Epidemiological and gynecological correlates with female genital mutilation among Beni-Suef University students; cross sectional study

Ahmed E. Arafa [a], Rasha S. Elbahrawe [a], Sherwet M. Shawky [b], Ahmed M. Abbas [c,*]

[a] Department of Public Health, Faculty of Medicine, Beni-Suef University, Egypt
[b] Department of Obstetrics & Gynecology, Faculty of Medicine, Beni-Suef University, Egypt
[c] Department of Obstetrics & Gynecology, Faculty of Medicine, Assiut University, Egypt

A B S T R A C T

Objective: This study aims to evaluate the prevalence of FGM/C among university students in Beni-Suef, Egypt and detect the possible socio-demographic and gynaecological associations.
Study design: A cross-sectional study had been conducted on 1723 females attending all faculties of Beni-Suef University (n = 28) and representing all academic years were selected using a multi-stage random sampling to participate in this study. By the beginning of the second term of the academic year 2016/2017, students were interviewed using a questionnaire included questions about the socio-demographic charcteristics, gynecological history, exposure to FGM/C and its justifications, sources of knowledge about FGM/C, gynecological manifestations associated with menstrual flow during the past 12 months and the pain relief methods they used during the same period.
Results: Slightly less than half of our students (47.3%) were circumcised. Students residing in rural areas and those with illiterate parents were more likely to experience FGM/C (p < .001). Family and friends were the main sources of knowledge about FGM/C, but uncircumcised girls resorted more to school teachers and TV/Internet for information about FGM/C (p < .001). Most of the uncircumcised (98.2%) and the circumcised girls (73.5%) believe that the practice should not be justified, while the justifications were mainly religious and social. Dysmenorrhea and backaches were highly incident among the girls with no association between these symptoms and FGM/C.
Conclusions: FGM/C is less prevalent among the university girls in Beni-Suef. Residential, parental level of education, religious and traditional issues are among the most potential risk factors for FGM/C.
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1. Introduction

Female genital mutilation/cutting (FGM/C), also referred to as female circumcision (FC), comprises partial or complete removal of female external genitalia for non-therapeutic reasons [1]. It is absolutely a harmful traditional practice with many gynaecological and psychological consequences [2–6], however it prevails in many African countries and goes beyond borders by the immigrants and refugees [6–9]. The practice is categorized according to the nature and size of genitalia removed to four types where excision of the clitoris and labia minora constitutes almost 80% of all FGM/C and excision of all external genitalia with vaginal narrowing accounts for the remaining 20% [2–4].

Although FGM/C has been illegal in Egypt for almost 50 years [10], previous literatures showed that FGM/C, especially in Upper Egypt, is almost universal and reached a high of 73.9%, 75.5% and 85.5% in Beni-Suef, Assiut and Luxor, respectively [11–15]. Religious, traditional, sexual and hygienic reasons have been reported by advocators of FGM/C, which could explain its high prevalence rates and the intension of many mothers to encourage the continuation of the practice [11–16].

Many governmental and non-governmental institutions have already launched anti-FGM/C campaigns in cooperation with community leaders, activists, feminists and prominent religious leaders, however whether these activities could tackle this practice or not needs to be further assessed [16,17].

In the regards, the objective of our study is to study the epidemiology of FGM/C among university students in Beni-Suef, Egypt and investigate the socio-demographic associations and gynaecological correlates with this practice.

2. Materials and methods

This cross-sectional study was conducted on a total of 1723 girls attending 28 different faculties in Beni-Suef University at the beginning of the second term of the academic year 2016/2017. Beni-Suef University is one of the largest educational institutions in Upper Egypt with more than 45,000 students registered in its 28 faculties; 12 faculties of humanities, social and behavioural sciences, 9 faculties of health sciences, and 7 faculties of natural sciences and engineering and computer sciences.

The sample size was calculated using Epi-Info version 7 Stat Calc, [Center for Disease Control (CDC), WHO], based on the following criteria; circumcision rate of 50%, confidence level of 95%, and margin of error of 5%. A multi-stage random sampling methodology was used to include female students from all faculties and all academic years. Later, random sampling was applied from every grade level in every faculty with a minimum sample of 10% of total female students registered in each academic year.

Ethical approval was obtained from the Research Ethics Committee at the Faculty of Medicine, Beni-Suef University, and then institutional approvals were obtained. The students were informed of the purpose of the study with confirming confidentiality of data. The participating girls gave a verbal consent.

For data collection, an Arabic questionnaire was designed by the authors. The questionnaire had three sections: section I included socio-demographic characteristics, age at menarche, length of menstrual cycle and menstrual flow. Section II questioned if the girl was circumcised, justifications used for FGM/C, and sources of information girls used to acquire knowledge about FGM/C. Section III investigated the gynaecological symptoms, mainly dysmenorrhea and other symptoms of premenstrual syndrome during the past 12 months of the study, and the methods girls used for pain relief throughout the same period.

The Cronbach's alpha for the reliability of the questionnaire was 0.72 and the content validity was judged by a professor of gynecology and obstetrics and a professor of public health. A trained team of medical students with a supervisor interviewed the university female students, and the questionnaires were revised for completeness. The medical students, who were filling the questionnaires themselves during the interview to avoid any missing data and to make sure of the seriousness of the participants.

Data were analyzed using the software, Statistical Package for Social Science (SPSS Inc. Released 2009, PASW Statistics for Windows, version 22.0: SPSS Inc., Chicago, Illinois, USA). Qualitative data were described as numbers and percentages. Chi-square test was used for comparison between groups. Quantitative data were described as means ± SD. Student t-test was used for comparison between the groups. Logistic regression analysis was carried out to assess the effect of different factors on FGM/C. P values <.05 were considered significant.

3. Results

The study shows that out of the 1723 interviewed university girls, 815 (47.3%) were circumcised. Girls were then classified to circumcised and uncircumcised categories. The mean age of the university girls was 20.89 ± 1.68 years for the circumcised and 20.81 ± 1.76 years for the uncircumcised. In the circumcised group, 11.4% of girls had illiterate fathers compared to only 2.5% in the uncircumcised group, and 23.1% of the circumcised girls had illiterate mothers compared to 3.6% of the uncircumcised group (p < .001). However statistically insignificant; the menarche age of the circumcised girls was relatively higher (p = .098), while the menstrual cycle duration of the circumcised girls was significantly shorter than their uncircumcised counterparts (p = .001) (Table 1). Multivariate regression analysis showed that all the factors associated with FGM/C by univariate analysis were potential risk factors (p < .05).

The sources girls used to get information about FGM/C were mainly family members (72% of the circumcised girls and 74.8% of the uncircumcised girls, p = .108), followed by friends (22.6% and 25.2%, p = .110), school teachers (16.8% and 24.8%, p < .001), TV and social media (13.5% and 23.2%, p < .001), whereas only 6.7% of the circumcised girls and 8% of the uncircumcised girls resorted to doctors or nurses (p = .177). In general, the uncircumcised girls tended to get their information from more than one source (Fig. 1).

Most of girls, in the uncircumcised group (98.2%) or even in the circumcised one (73.5%), believe that FGM/C should not be justified. Justifications offered by girls were mostly religious and social. Circumcised girls were more likely to introduce justifications, and were also more likely to attribute FGM/C to religious, social or hygienic causes (p < .001) (Table 2).

Among the participating girls, both the circumcised and the uncircumcised girls reported high rates of dysmenorrhea 92% and 93.4% throughout the past 12 months. Backaches, nervousness, acne/flushing, and generalized aching were the most common reported symptoms with menstruation in both groups (Table 3).

Girls from both groups stated drinking herbal fluids, taking medications, and missing university lectures as a result of dysmenorrhea and other symptoms associating with menstruation. Circumcised girls reported higher rates of drinking fluids, but lower rates of taking medications and missing lectures (p < .05) (Table 4).

Table 1
Comparison between circumcised and uncircumcised university students regarding their socio-demographic and gynaecological characteristics.

Socio-demographic and gynaecological data		Circumcised (n = 815)	Uncircumcised (n = 908)	p-value	Odds ratio (OR)
Age (years)[a]		20.89 ± 1.68	20.81 ± 1.76	.314	–
Residence[b]	Urban	376 (46.1)	759 (83.6)	**<.001**[*]	0.55
	Rural	439 (53.9)	149 (16.4)		
Father's Education[b]	Illiterate	93 (11.4)	23 (2.5)	**<.001**[*]	0.91
	Literate	722 (88.6)	885 (97.5)		
Mother's Education[b]	Illiterate	188 (23.1)	33 (3.6)	**<.001**[*]	0.80
	Literate	627 (76.9)	875 (96.4)		
Age at menarche[a]		13.10 ± 1.41	12.99 ± 1.50	.089	–
Marriage[b]		46 (5.6)	38 (4.2)	.098	1.33
Menstrual cycle duration (days)[a]		27.95 ± 5.04	28.93 ± 6.63	**.001**[*]	–
Menstrual flow (days)[a]		5.29 ± 1.51	5.19 ± 1.37	.145	–

[a] Data are presented as mean ± standard deviation.
[b] Data are presented as number (%).
[*] Statistical significant difference.