Prevalence of female genital cutting among Egyptian girls

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Objective Female genital cutting (FGC) is the collective name given to traditional practices that involve partial or total cutting away of the female external genitalia whether for cultural or other non-therapeutic reasons. In Egypt, the result of the Demographic Health Survey in 2000 revealed that 97% of married women included in the survey experienced FGC. The aim of this study is to measure the prevalence of FGC among schoolgirls in Egypt.

Methods Multistage random technique was applied for site selection. First, Egypt was divided into five geographical areas; Greater Cairo, Lower Egypt, Upper Egypt, Sinai and Suez Canal Region. Second, from each governorate, two educational districts were selected randomly (except Luxor). In each of the selected districts, the schools were divided into primary, preparatory and secondary schools. In each education stage, the schools were divided into rural, urban, government and private. The total number of females interviewed was 38 816.

Findings The prevalence of FGC among schoolgirls in Egypt was 50.3%. The prevalence of FGC was 46.2% in government urban schools, 9.2% in private urban schools and 61.7% in rural schools. Educational levels of mother and father were negatively associated with FGC ($P < 0.001$). The mean age of the time of FGC was 10.1 ± 2.3 years.

Conclusion FGC prevalence is lowering, yet more active education at the grass-roots level is needed to create change.

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Une traduction en français de ce résumé figure à la fin de l'article. *Al final del artículo se facilita una traducción al español.* الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

Introduction

Female genital cutting (FGC) is the collective name given to traditional practices that involve partial or total cutting away of the female external genitalia whether for cultural or other non-therapeutic reasons.[1] It is estimated that between 100 and 130 million girls and women now alive in at least 28 African countries and the Middle East have been subjected to FGC.[2]

FGC represents a fundamental violation of women's and girls' rights. Eighteen African countries have prevalence rates of 50% or higher. FGC has traditionally been called female circumcision. Recognition of its harmful physical, psychological and human rights consequences has led to the use of the term "female genital mutilation" or FGM. Many women who have undergone FGC do not consider themselves to be mutilated and have become offended by the term "FGM". Recently, other terms such as "female genital cutting" have increasingly been used.

Practices involving cutting of female genitals have been found throughout history in many cultures, but there is no definitive evidence documenting when or why this ritual began. Some theories suggest that FGC might have been practised in ancient Egypt as a sign of distinction, while others hypothesize its origin in ancient Greece, Rome, Pre-Islamic Arabia and the Tsarist Russian Federation.

In Egypt, the Demographic Health Survey in 2000 revealed that 97% of married women surveyed experienced FGC.[3] Another study, carried out by the Egyptian Ministry of Health and Population in 2003, reported that 94.6% of married women had been exposed to FGC and 69.1% of those women agreed to carry out FGC on their daughters. A pilot study by the Health Insurance Organization showed that 41% of female students in primary, preparatory and secondary schools had been exposed to FGC.

Rational

The majority of existing research into FGC concentrated on women of reproductive age. Girls exposed to FGC had not been studied before on a national level. Thus, the Ministry of Health and Population realized the importance of conducting this prevalence study.

Objectives

Our objectives were to measure the prevalence of FGC among schoolgirls in Egypt, identify who performs FGC, and document the rate of reported complications.

Places of study

Multistage random technique was applied for site selection as follows:

First stage

Egypt was divided into five geographical areas, from which nine governorates were randomly selected (Table 1):

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1. Greater Cairo (Cairo)
2. Lower Egypt (Sharkia, Demiatta, Dakahlyia and Alexandria)
3. Upper Egypt (Bani Suif, Assuit and Luxor city)
4. Sinai (North Sinai)
5. Suez Canal Region (Port Said)

Although it is a small city, Luxor is considered as a governorate due to its cultural and historic importance. It has only one health district which was included in our study.

Second stage

From each governorate, two educational districts were selected randomly. In each of the selected districts, the schools were divided into primary, preparatory and secondary schools. In each education stage, the schools were divided into rural, urban, government and private (Table 2).

Third stage

Representative schools were selected randomly.

Sample size

The assumption in calculating the sample size in each governorate depends on a decrease by 5% in the current prevalence of FGC. Using a level of significance at 0.05 and the power of the test of 80%, the sample size (with the calculated sample size in parentheses) in each selected governorate and Luxor city was as follows:

Cairo = 7696 (6900)
Alexandria = 4597 (4200)
Sharkia = 4487 (4200)
Dakahlyia = 4240 (4200)
Demiatta = 3415 (4200)
Port Said = 1989 (2200)
Bani Suif = 4135 (4000)
Assuit = 4508 (4200)
Luxor city = 1761 (1600)
North Sinai = 1988 (1800)

The total sample size was 38 816 girls.

Time of field study was from March to May 2005.

Method

A cross-sectional study was conducted in all selected governorates. An interview questionnaire with 20 questions about FGC was developed and tested before its use. The questionnaire included data pertaining to age, place of residence in the last 5–10 years, educational level of girl, her mother and father, age at time of FGC, reasons given to support and reject the practice, who performed the FGC, consequences of FGC, and the decision-maker. Interviews of the female students were conducted by female physicians working in the school sector of the National Health Insurance Organization.

Table 1. **The prevalence of FGC among female students in selected governorates in Egypt**

Governorates	Total no. of females interviewed	Females with FGC	
		No.	Percentage
Cairo	7 696	2 811	36.5
Alexandria	4 597	1 800	39.2
Sharkia	4 487	3 314	73.9
Dakahlyia	4 240	2 111	49.8
Demiatta	3 415	735	21.5
Port Said	1 989	356	17.9
Bani Suif	4 135	3 024	73.1
Assuit	4 508	3 389	75.5
Luxor city	1 761	1 506	85.5
North Sinai	1 988	503	25.3
Total	**38 816**	**19 543**	**50.3**

FGC, female genital cutting.

Statistical analysis

Data entry and coding was performed using Microsoft Excel 2000. First, simple frequency, mean, standard deviation and range were calculated. Thereafter, comparisons were made using Pearson's χ^2 test for categorical variables. All statistical analyses were performed using the Statistical Package for Social Science (SPSS) version 11.0 (SPSS Inc. Headquarters, Chicago, Illinois, United States of America). Level of significance was set at $P \leq 0.05$.

Results

The total number of females interviewed was 38 816. The prevalence of FGC among schoolgirls was 50.3%. The prevalence of FGC was 46.2% in government urban schools, 9.2% in private urban schools and 61.7% in rural schools. Educational levels of mother and father were negatively associated with FGC ($P < 0.001$). The mean age of the time of FGC was 10.1 ± 2.3 years.

Discussion

FGC has remained a common practice in the countries where it has traditionally been performed.[4] The most common forms of FGC still widely practised throughout Egypt are type I (commonly referred to as clitoridectomy) and type II (commonly referred to as excision).[5] In Africa, the most common type of FGC is type II (excision of the clitoris and the labia minor) which accounts for up to 80% of all cases.[6] It is of note that there is no doctrinal basis for this practice in either the Islamic or Christian faiths.

In recent years, the laws regarding FGC have changed. In 1995, a ministerial decree forbade the practice and made it punishable by fine and imprisonment. A series of later ministerial decrees allowed certain forms but prohibited others. Doctors were prohibited from performing the procedure in government health facilities and non-medical practitioners were forbidden from practising any form. In 1996, a ministerial decree prohibited all medical and non-medical practitioners from performing FGC in either public or private facilities, except for medical reasons certificated by the head of a hospital's obstetric and gynaecology department. Perpetrators can lose their medical license and be subjected to criminal punishment.[7]

Most of the girls and women who have undergone FGC live in 28 African countries, although some live in Asia and the Middle East. They are also present in Australia, Canada, Europe and

the USA, primarily among immigrants from these countries. Due to international migration, FGC has become an issue of increasing concern in host countries.[4,8] The prevalence of FGC is quite high in most African countries. In Nigeria, the prevalence of FGC in 2004 ranged between 23.3% and 45.2%. The highest rates of more than 90% were found in Djibouti, Eritrea, Mali and Somalia.[9–11]

In our study, the overall prevalence rate of FGC was 50.3% among girls in the age group 10–18 years. In rural schools, the prevalence rate was 61.7% compared to 46.2% in urban schools. Of note, in private urban schools the prevalence rate was very low (9.2%). The difference in the prevalence rates of FGC is mainly due to educational status in both rural and urban areas.

There were marked differences in the prevalence of FGC between the governorates. In Upper Egypt governorates, the prevalence was high in Luxor city (85.5%) while in Assuit and Bani Suif rates were 75.5% and 73.1% respectively. In Lower Egypt governorates, the prevalence rates of FGC were 49.8% and 73.9% in Dakahlyia and Sharkia. The lowest rates of FGC were seen in Port Said, Demiatta and North Sinai with prevalence rates of 17.9%, 21.5% and 25.3% respectively. It is clear that FGC is widely practised in the southern parts of Egypt. It was also observed from this study that in the rural areas of Luxor, almost all females were circumcised (99.3%). This shows that the practice of FGC still persists in Upper Egypt even among highly educated families in urban areas. Religious reasons, traditions and social pressure are the main motives for performing FGC. These results are similar to those obtained from a community-based study in a Sudanese village in 2001.[12]

There is an obvious negative correlation between the female's parents' education and the practice of FGC. This observation was clearly noticed in all governorates studied. Parents with low or no education are the most likely to have circumcised their daughters with prevalence rates ranging between 59.5% and 65.1%, while parents with higher degrees of education are the least likely to have their daughters circumcised and the prevalence rate ranged between 19.5% and 22.2%. Similar results were obtained from the Egyptian Demographic and Health survey in 2003.[13]

The age at which FGC is performed on girls varies between countries and even from area to area within the same country. FGC is typically performed on young girls who are between 4 and 12 years old, however, the procedure may be carried out shortly after birth to some time before the age of marriage.[6]

In the current study, the average age at which the procedure of FGC was performed was 10.1 ± 2.3 years (Table 3). In some rural areas of Luxor city, some girls mentioned that they were circumcised soon after birth, during the neonatal period.

According to a WHO report on female genital mutilation, some communities in Africa perform FGC on infants a few days old. Generally, the average

Table 2. **Prevalence of FGC among females in different educational stages and localities**

Localities and educational stages	Total	Females with FGC	
		No.	Percentage
Localities			
Government urban schools	24 450	11 289	46.2
Private urban schools	1 170	108	9.2
Rural schools	13 196	8 146	61.7
		$\chi^2 = 1\,645.78$; $P = 0.000$	
Educational stage			
Primary	9 232	3 092	33.5
Preparatory	14 025	7 614	54.3
Secondary	15 559	8 837	56.8
		$\chi^2 = 1\,395.19$; $P = 0.0000$	
Educational level of mother			
Illiterate	15 028	9 719	64.7
Primary school	4 866	2 871	59.5
Preparatory/secondary	12 225	5 463	44.7
University	6 697	1 490	22.2
		$\chi^2 = 3\,654.18$; $P = 0.0000$	
Educational level of father			
Illiterate	10 061	6 546	65.1
Primary	4 889	3 085	63.1
Preparatory/secondary	13 268	6 785	51.1
University	10 598	3 127	19.5
		$\chi^2 = 3\,034.47$; $P = 0.0000$	

FGC, female genital cutting.

Table 3. **Age at the time of FGC**

Governorates	Range (years)	Mean ± SD
Cairo	7–14	9.9 ± 1.4
Alexandria	7–13	10.5 ± 1.5
Sharkia	8–14	11.1 ± 1.3
Dakahlyia	7–14	10.6 ± 1.4
Demiatta	8–14	11.3 ± 1.4
Port Said	7–13	10.7 ± 1.4
North Sinai	5–13	10.0 ± 1.7
Bani Suif	9–15	11.0 ± 1.4
Assuit	5–14	9.7 ± 1.7
Luxor city	< 1 month–15 years	3.8 ± 3.2
Total	**< 1 month–15 years**	**10.1 ± 2.3**

FGC, female genital cutting; SD, standard deviation.

age of performing FGC is lower in other African countries than in Egypt. In Nigeria, the average age at which FGC was performed was 6.9 ± 2.9 years, with 4% of women having the procedure performed in pregnancy.[14,15] According to the Demographic and Health Survey in Benin (2001), over one third of girls were cut before reaching their fourth birthday.[2] In some areas in Benin, girls are cut relatively late but before the age of 11.

In Africa, FGC is usually carried out by traditional practitioners or lay persons. In Egypt, in the past, the majority of FGC procedures were performed by traditional midwives, called *dayas*. However, according to the Demographic and Health Survey (1995),[16] the number of procedures performed by medical practitioners (doctors, nurses or trained midwives) tripled to 55% with a concomitant drop in the use of *dayas*. In the present study, physicians in their clinics performed 49.7% of FGC and at their hospitals 7.6%, while nurses performed only 10.4%. *Dayas* and midwives performed 29.3% of FGC while lay persons performed only 3%.

In Nigeria, medical doctors were the most mentioned operators (34.5%) followed by traditional birth attendants (33.8%). In contrast to Nigeria, in Benin, the Demographic and Health Survey data found that over 90% of daughters' circumcision were performed by traditional practitioners and only 0.5% of girls had the operation under medical care. In developed countries, immigrants asked doctors originally from their own community to circumcise their girls illegally. More frequently, traditional practitioners are brought into the country or girls are sent abroad to be circumcised.[15]

This medicalization of FGC has been condemned by WHO and is considered to perpetuate and promote FGC rather than to prevent or reduce its practice.[2,6]

The potential physical complications resulting from the procedure are numerous. An immediate effect of the procedure is pain because FGC is often carried out without anaesthesia. Short-term complications, such as severe bleeding which can lead to shock or death, are greatly affected by the type of FGC performed, the degree of struggle by the girl and the experience of practitioners or medical services once bleeding occurs. Other complications include infection because of unsanitary operating conditions, and significant psychological and psychosexual consequences of FGC. Our results revealed that 21.8% of girls said that there was mild pain after they were circumcised and 1.5% of girls reported that they suffered severe bleeding.

Recently, many articles have reported post-FGC complications (early and late) such as severe pain, bleeding, incontinence, infections, mental health problems, sexual problems, primary infertility and difficult labour with high episiotomy rate. In addition, the repetitive use of the same instruments on several girls without sterilization can cause the spread of HIV and Hepatitis B and C. In previous studies, the rate of complication ranged between 13% and 69%.[4,17–19]

The results of the present study (Table 4) showed that mothers are the main decision-makers for the procedure of FGC (65.2%). Fathers played minor roles as decision-makers for the procedure (9.4%) while the family as a whole represented 24.2% of the decision-makers. This result should direct our strategy to concentrate on changing the attitude of mothers and grandmothers towards the prevention of this violence against girls.

The circumcised girls in this study were asked for reasons to support the practice of FGC and they answered that circumcision is an important religious tradition (33.4%), cleanliness for girls (18.9%), cultural and social tradition (17.9%) and chastity (15.9%). Of note, religious tradition is still the most important reason for performing FGC in Egypt, which agrees with the results obtained from Demographic and Health Surveys in Egypt in 2000 and 2003. In these surveys, 72% of ever-married women reported that circumcision is an important part of religious tradition and about two-thirds of the

Table 4. **Attitude of females to FGC**

Factors	Frequency	%
Reasons support practice		
Religious	5499	33.4
Cleanliness	3110	18.9
Cultural/social issues	2943	17.9
Chastity	2613	15.9
Evidence of feminist	513	3.1
No comment	1773	10.8
Reasons reject practice		
Painful and unhealthy procedure	7079	53.9
Unnecessary for female	2298	17.5
No religious support	1628	12.4
Bad social habit	551	4.2
No comment	1576	12.0
Who performed FGC?		
Physicians in their clinics	9713	49.7
Physicians in hospital	1485	7.6
Nurses	2032	10.4
Midwives	5726	29.3
Lay people	587	3.0
Consequences of FGC		
No complications	14990	76.7
Mild complications (pain)	4260	21.8
Severe complications (bleeding)	293	1.5
Decision-maker		
Mother	12742	65.2
Father	837	9.4
Family	4729	24.2
Others	235	1.2

FGC, female genital cutting.

women had the impression that the husband prefers his wife to be circumcised. According to the Demographic and Health Survey in Egypt in 1995, more than one-third of ever-married women cited cleanliness as a reason while a small number saw it as a way to prevent promiscuity before marriage. In some communities, some families refuse to accept women who have not undergone FGC as marriage partners. Other studies in Africa concluded that the most significant factors associated with the acceptance of FGC were religion, tradition and social pressure, as reported in Egypt and Sudan,[12,20] while ethnicity was the most significant social predictor of FGC in Nigeria.[21] Both ethnicity and religion were the strongest predictors of FGC in the United Republic of Tanzania.[11] Also, and of note, sexuality was an important reason cited for this practice in some countries like Nigeria.[22]

In the present study, 53.9% of non-circumcised girls, said circumcision is not important, and that it is an unhealthy and painful procedure, while 17.5% of girls said that it is unnecessary for females. Around 12% of girls believed that there is no religious support for circumcision.

In 2003, the Egyptian Interim Demographic and Health Survey obtained information from women who said that their daughters would not be circumcised. The majority of these women (61%) simply said that they did not believe in the practice of FGC. Meanwhile, a substantial proportion of them expressed concern about potential health complications (42%) and only 20% saw FGC practice as against their religion. Other reasons included better marriage prospects (8%) and better sexual relations with their husband (5%). Another study in Egypt among medical students reported that 72–78% of medical students were against FGC.[20,23]

FGC has raised a lot of concerns among women's groups especially in African, international and professional organizations. Currently, many African governments recognize that FGC is a violation of the human rights of girls and women.

Any action against FGC should take into account the multiplicity of reasons that support and motivate its practice. It is an issue that demands a collaborative approach involving health professionals, religious leaders, educationalists and nongovernmental organizations. Governments should take an active role in supporting regional and international initiatives to combat FGC, such as WHO, the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA). The role of international solidarity is to complement and support the work carried out locally by providing technical, methodological and financial support. ■

Competing interests: None declared.

Résumé

Prévalence des mutilations génitales féminines chez les filles en Egypte

Objectif Les mutilations génitales féminines (MGF) désignent l'ensemble des pratiques traditionnelles comprenant une excision partielle ou totale des organes génitaux externes féminins pour des motifs non thérapeutiques culturels ou autres. En Egypte, l'enquête démographique et sanitaire menée en 2000 a révélé que 97 % des femmes mariées ayant participé à l'enquête avaient subi des MGF. L'objectif de la présente étude est de mesurer la prévalence de ces mutilations chez les écolières égyptiennes.

Méthodes On a appliqué une méthode de sondage aléatoire sur plusieurs niveaux pour sélectionner les sites. On a commencé par diviser l'Egypte en cinq zones géographiques : Grand Caire, Basse Egypte, Haute Egypte, Sinaï et Région du Canal de Suez. En second lieu, on a sélectionné au hasard, dans chaque gouvernorat, deux districts académiques (sauf celui de Louxor). Puis, dans chacun de ces districts, on a réparti les écoles en établissements primaires, préparatoires et secondaires. Pour chaque niveau d'enseignement, on a classé les écoles en établissements ruraux, urbains, publics et privés. Au total, 38 816 filles ont été interrogées.

Résultats La prévalence des MGF parmi les écolières égyptiennes était en moyenne de 50,3 %. Elle était plus précisément de 46,2 % chez les écolières du secteur public urbain, de 9,2 % chez celles du secteur privé urbain et de 61,7 % chez celles des écoles rurales. Il existait une association négative entre les niveaux d'éducation de la mère et du père et la prévalence des MGF ($p < 0,001$). Les MGF avaient été subies en moyenne à 10,1 ± 2,3 ans.

Conclusion La prévalence des MGF est en baisse, néanmoins une éducation plus active à la base est nécessaire pour faire changer les choses.

Resumen

Prevalencia de la mutilación genital femenina entre las niñas en Egipto

Objetivo El concepto de mutilación genital femenina (MGF) abarca en general las prácticas tradicionales que entrañan la ablación parcial o total de los genitales externos femeninos por razones no terapéuticas, culturales o de otro tipo. En Egipto, el resultado de la Encuesta de Demografía y Salud realizada en 2000 reveló que un 97% de las mujeres casadas participantes en la encuesta habían sufrido MGF. El objetivo de este estudio fue medir la prevalencia de MGF entre las escolares de Egipto.

Métodos Se aplicó un método de muestreo aleatorizado polietápico para seleccionar los sitios. Primero, el país se dividió en cinco zonas geográficas: área metropolitana de El Cairo, Bajo Egipto, Alto Egipto, Sinaí y región del Canal de Suez. Segundo, en cada prefectura se seleccionaron al azar dos distritos educativos (excepto Luxor). En cada uno de los distritos seleccionados, las escuelas se clasificaron en primarias, preparatorias y secundarias. En cada nivel educativo, las escuelas se clasificaron en rurales, urbanas, públicas y privadas. El número total de mujeres entrevistadas fue de 38 816.

Resultados La prevalencia de MGF entre las escolares de Egipto era del 50,3%. El porcentaje era de un 46,2% en las escuelas públicas urbanas, 9,2% en las escuelas privadas urbanas, y 61,7% en las escuelas rurales. Los niveles educativos de la madre y el padre estaban inversamente relacionados con la MGF (P < 0,001). La edad media en el momento de la MGF fue de 10,1 ± 2,3 años.

Conclusión La prevalencia de la MGF está disminuyendo, pero se requiere una educación más activa a nivel popular para propiciar los cambios necesarios.

ملخص

معدل انتشار تشويه الأعضاء التناسلية بين الفتيات المصريات

الغرض: يعد تشويه الأعضاء التناسلية لدى الإناث اسماً عاماً لممارسات موروثة تتضمَّن القطع الجزئي أو الكامل للأعضاء التناسلية الأنثوية لأسباب اجتماعية أو غير علاجية أخرى. وقد أظهر المسح الصحي السكاني في مصر عام 2000 أن 97% من المتزوجات اللاتي شملهن المسح عانين من ذلك التشويه. وتستهدف هذه الدراسة قياس معدل انتشار تشويه الأعضاء التناسلية لدى فتيات المدارس في مصر.

الطريقة: طبقنا أسلوباً عشوائياً متعدد المراحل لاختيار مواقع الدراسة، فأولاً قسمنا مصر إلى خمس مناطق جغرافية هي القاهرة الكبرى، والصعيد، والوجه البحري، والوجه القبلي، وسيناء ومنطقة قناة السويس، وثانياً اخترنا منطقتين من كل محافظة اختياراً عشوائياً (باستثناء الأقصر). وفي كل منطقة مختارة قسمنا المدارس إلى ابتدائية وإعدادية وثانوية. وفي كل مرحلة تعليمية قسمنا المدارس إلى مدارس ريفية وحضرية وحكومية وخاصة. وبلغ عدد الفتيات اللاتي قابلناهن 816 38 فتاة.

الموجودات: بلغ معدل انتشار تشويه الأعضاء التناسلية بين فتيات المدارس في مصر 50.3%، وقد كان معدل التشويه 46.2% في المدارس الحضرية الحكومية، و9.2% في المدارس الحضرية الخاصة و61.7% في المدارس الريفية. وقد كانت المستويات التعليمية للأمهات والآباء مرتبطة ارتباطاً عكسياً مع تشويه الأعضاء التناسلية للإناث (P<0.001). وقد بلغ متوسط العمر عند الإقدام على التشويه 10.1 ± 2.3 سنوات.

الاستنتاج: إن معدل تشويه الأعضاء التناسلية لدى الإناث آخذ في الانخفاض، وإن كنا بحاجة إلى المزيد من الأنشطة التثقيفية في المستويات الشعبية لإحداث التغيير المنشود.

References

1. Toubia N. *Caring for women with circumcision*. Raimbo, NY; 1999.
2. *Benin DHS*. Geneva: UNICEF; 2001.
3. El-Zanaty F, Way AA. *Egypt demographic and health survey 2000*. Calverton, MD: Ministry of Health and Population, National Population Council, and ORC Macro; 2001.
4. Elgaali M, Strevens H, Mardh PA. Female genital mutilation an exported medical hazard. *Eur J Contracept Reprod Health Care* 2005;10:93-7. PMID:16147813 doi:10.1080/13625180400020945
5. Al-Hussaini TK. Female genital cutting - types, motives and perineal damage in laboring Egyptian women. *Med Pinc Pract* 2003;Apr-Jun:123-8.
6. *Female genital mutilation* [Fact sheet no. 241]. Geneva: WHO; 2006.
7. *Egypt: report on female genital mutilation (FGM) or cutting (FGC)* [FMC Country Report]. US Department of State; 2001.
8. Thierfelder C, Tanner M, Bodiang CM. Female genital mutilation in the context of migration: experience of African women with the Swiss health care system. *Eur J Public Health* 2005;15:86-90. PMID:15788809 doi:10.1093/eurpub/cki120
9. Abubakar I, Iliyasu Z, Kabir M, Uzoho CC, Abdulkadir MB. Knowledge, attitude and practice of female genital cutting among antenatal patients in Aminu Kano Teaching Hospital, Kano. *Niger J Med* 2004;13:254-8. PMID:15532227
10. Mandara MU. Female genital mutilation in Nigeria. *Int J Gynaecol Obstet* 2004;84:291-8. PMID:15001386 doi:10.1016/j.ijgo.2003.06.001
11. Klouman E, Manogi R, Klepp KI. Self-reported and observed female genital cutting in rural Tanzania associated demographic factors, HIV and sexually transmitted infections. *Trop Med Int Healt* 2005;10:105-15. doi:10.1111/j.1365-3156.2004.01350.x
12. Almroth L, Almroth-Bergren V, Hassanein OM, El-Hadi N, Al Said SS, Hasaan SS, Lithell UB, Bergstorm S. A community based study on the change of practice of female genital mutilation in a Sudanese village. *Int J Gynaecol Obstet* 2001;74:179-85. PMID:11502298 doi:10.1016/S0020-7292(01)00392-7
13. El-Zanaty F, Wavy AA. *Egypt interim demographic and health survey*. Ministry of Health and Population, National Population Council, El-Zanaty and Associates, ORC Macro; 2004.
14. Dare FO, Oboro VO, Fadiora SO, Orji EO, Sule-Odu AO. Debate to female genital mutilation: an analysis of 522 cases in South-Western Nigeria. *J Obstet Gynaecol* 2004;24:281-3. PMID:15203627 doi:10.1080/01443610410001660850
15. *Female genital mutilation – a human rights information pack*. Amnesty International Report; 2004.
16. El-Zanaty F, Hussein EM, Shawky GA, Way AA, Kishor S. *Egypt demographic and health survey 1995*. Calverton, MD: National Population Council and Macro International;1996.
17. Almroth L, Elmusharaf S, El Hadi N, Obeid A, El Sheikh MA, Elfadil SM et al. Primary infertility after genital mutilation in girlhood in Sudan: a case-control study. *Lancet* 2005;366:385-91. PMID:16054938 doi:10.1016/S0140-6736(05)67023-7
18. Behrendt A, Moritz S. Post-traumatic stress disorder and memory problems after female genital mutilation. *Am J Psychiatry* 2005;162:1000-2. PMID:15863806 doi:10.1176/appi.ajp.162.5.1000
19. Hakim LY. Impact of female genital mutilation on maternal and neonatal outcomes during parturition. *East Afr Med J* 2001;78:255-8. PMID:12002086
20. Allam MF, de Irala-Estevez J, Fernandez-Crehuet-Navajas R, Serrano del Castillo A, Hoashi JS, Pankovich MB, et al. Factors associated with the condoning of female genital mutilation among university students. *Public Health* 2001;115:350-5. PMID:11593445 doi:10.1016/S0033-3506(01)00474-7
21. Snow RC, Slanger TE, Okonofua FE, Oronsaya F, Wacker J. Female genital cutting in southern urban and peri-urban Nigeria - Self-reported validity, social determinants and secular trend. *Trop Med Int Health* 2002;7:91-100. PMID:11851959 doi:10.1046/j.1365-3156.2002.00829.x
22. Ugboma HA, Akani CI, Babatunde S. Prevalence and medicalization of female genital mutilation. *Niger J Med* 2004;13:250-3. PMID:15532226
23. Refaat AH, Dandash KF, Lotfy G, Eyada M. Attitudes of medical students towards female genital mutilation. *J Sex Marital Ther* 2001;27:589-91. PMID:11554222 doi:10.1080/713846814