Medicalization of female genital cutting in Egypt

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التغطية الطبية على تشويه الأعضاء التناسلية الأنثوية الظاهرة في مصر

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الخلاصة: تزداد التغطية الطبية على تشويه الأعضاء التناسلية الأنثوية الظاهرة، إذ تقدم هذه الدراسة العَرْضِيَّة محدِّدات ممارسة تشويه الأعضاء التناسلية الأنثوية الظاهرة لدى الأطباء. وأظهرت الاستجابات التي وَردت من 193 طبيباً أنه رغم أن 88٪ منهم يعرفون واحداً على الأقل من العواقب الجسدية أو الجنسية الضائرة لتشويه الأعضاء التناسلية الأنثوية الظاهرة، فإن 18٪ منهم يوافقون عليه، وذلك بسبب ديني في غالب الأحيان (82٪). كما أن خمسهم تقريباً (19٪) يمارسونه، وغالباً بسبب اقتناعهم به (51٪)، أو من أجل الحصول على الربح (30٪). كما وجدت الباحثة أن هناك ارتباطاً سلبياً بين المعارف حول العواقب الضائرة لتشويه الأعضاء التناسلية الأنثوية الظاهرة وبين كل من الموافقة عليه وممارسته. وقد كانت التأثيرات الثقافية هي المحدد الأعلى أهمية (81٪)، يتلوها فقدان المعرفة (35٪).

ABSTRACT The medicalization of female genital cutting (FGC) has been increasing. This cross-sectional study estimated the determinants of the practice of FGC among Egyptian physicians. Responses from 193 physicians showed that while 88% of them knew at least one adverse physical or sexual consequence, 18% approved of it, mostly as a religious observation (82%). Almost one-fifth (19%) of physicians practised FGC, mostly due to conviction (51%) or for profit (30%). A negative correlation was found between knowledge of the adverse consequences of FGC and both approval and practice. Cultural influences were the highest determinant (81%) followed by lack of knowledge (35%).

Médicalisation de l'ablation génitale féminine en Égypte

RÉSUMÉ La médicalisation de l'ablation génitale féminine est en augmentation. Cette étude transversale a estimé les déterminants de la pratique de l'ablation génitale féminine chez les médecins égyptiens. Les réponses envoyées par 193 médecins ont montré que si 88 % d'entre eux savaient que cette pratique avait au moins une conséquence néfaste sur le plan physique ou sexuel, 18 % l'approuvaient, surtout en tant que devoir religieux (82 %). Près d'un cinquième (19 %) des médecins pratiquaient l'ablation génitale féminine, essentiellement par conviction (51 %) ou à des fins lucratives (30 %). Une corrélation négative a été observée entre, d'une part la connaissance des conséquences néfastes de l'ablation génitale féminine et, d'autre part, l'approbation et la pratique de cet acte. Les influences culturelles constituaient le déterminant le plus important (81 %), suivi du manque de connaissances (35 %).

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Introduction

Female genital cutting/mutilation (FGC/FGM) refers to any alteration of the genitalia by excision or covering of the introitus done for nonmedical reasons [*1*]. There is a substantial amount of literature covering the different physical [*2–5*] and psychosexual health complications [*6–10*] and there is a consensus that FGC is harmful because it constitutes an irreversible reduction of human capacity [*11*]. The practice is not based on a requirement of religious observance, although parents usually seek it for their daughters in good faith. It is directed to the social control of women's sexuality, or with the preservation of virginity, as a kind of "rite of passage" [*12,13*].

FGC is increasingly prohibited by law and medical practice in many countries and opposed by the World Health Organization [*14*]. Many believe that physicians have an important role in eliminating FGC by educating patients and communities [*15,16*]. The prevalence of the practice in Egypt declined from an estimated 88% of daughters in 1995 to 70% by 2005 according to sequential demographic and health survey reports [*17–20*]. Over the same period, however, the proportion of operations performed by medical personnel increased from 55% to 75%. The increased involvement of medical staff in FGC [*12,21*] is thought to be a response to the emphasis on health risks that has characterized anti-FGC campaigns [*22*], as it is thought to minimize pain and adverse consequences while sustaining the practice to meet cultural demand. The debate over medicalization of female "circumcision" has been cast as a moral dilemma for physicians: to protect women's health at the expense of legitimizing a destructive practice as a form of harm reduction or to hasten the elimination of a dangerous practice while allowing women to die from preventable causes [*22*].

A study of knowledge and attitude of Egyptian medical students showed that even in an educated population a considerable amount of ignorance exists concerning FGC [*23,24*]. The present study aimed to identify the prevalence and determinants of the practice of FGC by Egyptian physicians. Additionally, it explored the approval and knowledge of the physicians of this practice and their need for training.

Methods

A cross-sectional descriptive study was conducted.

Sample

Egyptian physicians were stratified according to regional distribution into urban (Cairo), Lower Egypt (Sharqia and Gharbia) and Upper Egypt (Beni Suef and Qena) governorates. The sample size was estimated from EDHS2005 data using *Epi-info* software with 95% power to be 141 physicians.

Lists of physicians by specialty in the 4 major disciplines of surgery, medicine, obstetrics/gynaecology and paediatrics with their subspecialties, were obtained from the Egypt telephone directory. To avoid a low response rate, the number of distributed questionnaires was doubled (282). Names were selected randomly from the lists and weighted according to the numbers of practising physicians in each selected governorate. Double weight was given to both surgeons and obstetricians/gynaecologists (94 each and 47 each for the other 2 specialties).

Instrument

A self-administered questionnaire with 72 questions was specially designed based on a conceptual model hypothesized by the author whereby physicians may be practising

FGC due to: cultural influences, financial benefits, or lack of knowledge about the consequences.

The questionnaire contained a section for respondents' sociodemographic data and their knowledge of the anatomical site and complications (both physical and psychosexual) of FGC. There were questions regarding their approval of the practice and reasons for approval or disapproval. Another section requested information regarding their practice of FGC with reasons and details of their practice.

The questionnaires were enveloped and delivered through the mail.

Ethical considerations

The questionnaire clearly stated that responses were confidential and it was anonymous. It assured the respondents that sociodemographic questions were for identifying their characteristics not their identity. Privacy was secured through enveloped questionnaires and responses. There was a space for the respondents to express their opinion and comments.

Data capture and analytical framework

The data were analysed using *SPSS*, version 11. The characteristics of physicians were analysed using the Pearson chi-squared test and odds ratio (OR) with 95% confidence interval (CI). The OR of linear association was estimated for selected variables.

Knowledge variables were computed from knowing about any of the physical or psychosexual consequences of FGC. Cultural influences were estimated by the physicians' original residency status (rural versus urban) and current residence in Lower or Upper Egypt. Financial benefits were considered for those who mentioned that they carried out FGC for profit. The correlation between knowledge, approval and practice was analysed. The conceptual framework of FGC practice was tested to identify determinants of physicians' practice of FGC.

Results

A total of 193 physicians responded to the questionnaire (68% response rate). The majority were male (91%) and married (96%) and most were older than 45 years of age (75%) (Table 1). About 40% were living in Cairo, 34% in Upper Egypt and 25% in Lower Egypt; 70% were of urban origin. They were mostly educated to master's degree level or higher. Obstetricians/gynaecologists comprised 41% of the respondents.

Knowledge of FGC

Almost all of the physicians (91%) knew the different anatomical parts removed by FGC in Egypt, mostly reporting type II procedure (clitoris and labia minora) (76%) (Table 2). However, comments focused on removal (or scratching) of part of the clitoris or labia minora if they are hypertrophied.

Most of them knew at least one of the physical consequences of FGC (86%), mostly bleeding (75%), shock (64%) and female genital disfigurement (63%) (Table 2). However, 14% either denied that there were any physical consequences or did not know any. Abound 70% of respondents identified at least 1 sexual complication, mostly female sexual dysfunction (64%) and loss of sexual desire (37%). One-third of them denied or did not know any sexual consequences. Overall, most of the respondents knew at least 1 of the consequences (88%) of FGC, while 11% denied there were any consequences. A majority (91%) approved teaching FGC and its consequences in the medical school curriculum (Table 2). Com-

Table 1 **Knowledge, approval and practice of female genital cutting (FGC) of the studied physicians (n = 193) according to sociodemographic characteristics**

Variable	Knowledge			Approve			Practice			Total	
	%	OR (95% CI)	*P*-value	%	OR (95% CI)	*P*-value	%	OR (95% CI)	*P*-value	No.	%
Age (years) (n = 181)			0.476			0.774			0.309		
< 45	26.3	0.7 (0.2–2.1)		23.3	1.1 (0.5–2.9)		18.9	1.6 (0.6–4.0)		46	25.4
45+	73.8	–		76.7	–		81.8	–		135	74.6
Sex			0.382			0.592			0.730		
Female	10.0	0.4 (0.1–3.2)		11.8	0.7 (0.2–2.4)		10.8	0.8 (0.3–2.6)		18	9.3
Male	90.0	–		88.2	–		89.2	–		175	90.7
Current practice (n = 191)			0.229[b]			0.012[b]			0.022[b]		
Cairo	44.0	1.0[a]		20.6	1.0[a]		25.7	1.0[a]		79	41.4
Lower Egypt	22.0	0.4 (0.1–1.3)	–	32.4	3.1 (1.0–9.9)	–	25.7	1.8 (0.6–5.6)	–	47	24.6
Upper Egypt	34.0	0.5 (0.1–1.7)		47.0	3.4 (1.2–9.8)		48.6	2.8 (1.1–7.4)		65	34.0
Origin (n = 186)			< 0.001			< 0.001			0.218		
Rural	23.3	7.3 (2.8–19.0)		55.9	4.0 (1.8–9.5)		37.8	0.6 (0.3–1.3)		55	29.6
Urban	76.7	–		44.1	–		62.2	–		131	70.4
Marital status			0.288			0.576			0.159		
Single	4.7	1.1 (1.0–1.2)		5.9	0.6 (0.1–3.3)		0.0	NA		8	4.1
Married	95.3	–		94.1	–		100.0	–		185	95.6
Degree			0.062			0.013			< 0.001[b]		
Diploma	18.2	1.0[a]		32.4	3.4 (1.1–10.0)	[b]	35.1	5.7 (1.8–18.0)		38	19.7
Masters	36.5	1.6 (0.5–5.2)	–	41.2	2.0 (0.7–5.4)	–	45.9	3.4 (1.2–9.7)	–	72	37.3
PhD/fellowship	45.3	2.9 (0.8–10.8)	[b]	26.5	1.0[a]		18.9	1.0[a]		83	43.0
Specialty (n = 185)			0.011[b]			0.795[b]			0.927[b]		
Ob/gyn	43.4	6.1 (1.4–27.6)		46.7	1.0[a]		42.9	1.0 (0.3–4.0)		76	41.1
Surgery	32.9	3.3 (0.8–13.5)	–	20.0	0.5 (0.2–1.5)	–	31.4	0.9 (0.2–3.8)	–	61	33.0
Medicine	15.2	3.4 (0.6–21.8)	–	20.0	1.2 (0.4–3.9)	–	14.3	0.9 (0.2–4.7)	–	28	15.1
Paediatrics	8.5	1.0[a]		13.3	1.1 (0.3–4.3)		11.4	1.0[a]		20	10.8

[a]*Reference category;* [b]*Linear trend.*
OR = odds ratio; CI = confidence interval; Ob/gyn = obstetrics/gynaecology.

Table 2 **Knowledge of female genital cutting (FGC) as practised in Egypt among the studied physicians (*n* = 193)**

Item	No.	%
*Site of FGC (*n = *156)*		
Both clitoris and labia minora	119	76.3
Labia minora only	9	5.8
Labia majora or pharonic	8	5.2
Clitoris only	6	3.8
Don't know	14	9.0
Physical consequences		
Bleeding	144	74.6
Shock	124	64.2
Female genital disfigurement	121	62.7
Reproductive tract infection	65	33.7
Urinary tract infection	64	33.2
None	25	13.0
Don't know	2	1.0
Psychosexual consequences		
Sexual dysfunction (loss of orgasm)	123	63.7
Loss of sexual desire	71	36.8
Dysparonia	55	28.5
Vaginal dryness	27	14.0
None	42	21.8
Don't know	16	8.3
Overall knowledge of FGC consequences		
Physical	166	86.0
Sexual	135	69.9
Overall level of knowledge		
Know any consequences	170	88.1
Deny any consequences	22	11.4
Don't know any consequences	1	0.5
Need for information through:		
Medical school curriculum	175	90.7
Ministry of Health programmes	128	66.3
Medical Syndicate programmes	97	50.3
Special workshops	88	45.6
No need	6	3.1

ments were mostly that no consequences would occur if the operation was done by a physician or gynaecologist or if done correctly

Respondents of urban origin had greater knowledge of FGC consequences (OR = 7.3; 95% CI: 2.8–19.0) (Table 1). Obstetricians/gynaecologists had more knowledge regarding the complications (OR = 6.1; 95% CI: 1.4–27.6). No other sociodemographic factor influenced the knowledge; even having a higher qualification was not a statistically significant factor.

Approval of FGC

The majority of the studied physicians (82%) did not approve the practice of FGC, the main reasons being that it reduces sexual pleasure (76%), is a painful procedure (64%) and is not required by religion (52%) (Table 3). On the other hand, 18% approved it, mainly for religious reasons (82%) and as a "good custom" (15%). Some of those who approved it also mentioned that they approved it as a cosmetic procedure.

Over 40% of the physicians believed that physicians are the most suitable people to practise FGC, while over half did not approve of the practice by anyone (Table 3). Two-thirds approved the banning law. Reasons against the ban were that it leads to the practice of FGC in secret.

Physicians practising in Upper Egypt were the most likely to approve the procedure (OR = 3.4; 95% CI: 1.2–9.8) (Table 1). Physicians of rural origin were more likely to approve it than urban ones (OR = 4.0; 95% CI: 1.8–9.5). Those with qualifications up to diploma level were 3 times more likely to approve it than those with PhD or fellowship (OR = 3.4; 95% CI: 1.1–10.0).

Practice of FGC

Most of the respondents (81%) were not practising FGC, mainly because they were

Table 3 **Approval of female genital cutting (FGC) among the studied physicians (*n* = 193)**

Item	No.	%
Approve FGC		
No	159	82.4
Yes	34	17.6
Reason for approval (n = *34)*		
Religious practice	28	82.4
Good habit	5	14.7
Prevents adultery	1	2.9
Greater pleasure for husband	0	0.0
Preserves virginity	0	0.0
Reason for disapproval (n = *159)*		
Reduces sexual pleasure	120	75.5
Painful	102	64.2
Bad habit	97	61.0
Not religious practice	83	52.2
Causes health problems	78	49.1
Against women's dignity	76	47.8
Suitable person to practice FGC (n = *187)*		
Nobody	98	52.4
Physician	81	43.3
Female physician only	6	3.2
Nurse	2	1.1
Traditional birth attendant (*daya*)	0	0.0
Barber	0	0.0
Approve law banning FGC		
Yes	127	65.3
No	67	34.7

unconvinced about the benefits (Table 4). Half of those who were carrying out the procedure were convinced of the benefits, while 30% did it only for profit if they found the clitoris was hypertrophied by examination. The rest (19%) claimed the reason was harm reduction to prevent parents from going to a *daya* (traditional birth attendant) for the procedure.

Most of the physicians practising FGC were performing it in clinics (65%) using local anaesthesia and surgical instruments (Table 4). Some mentioned that they used stitches or diathermy. One-third (34%) had ever had postoperative complications. Two-thirds (62%) charged fees of less than 150 Egyptian pounds (around US$ 30) for the operation while the rest charged150–500 Egyptian pounds (almost US$ 100).

Half of those practising FCG resided in Upper Egypt (OR = 2.8; 95% CI: 1.1–7.4) (Table 1). Practising physicians were mostly educated to master's degree (46%) (OR = 3.4; 95% CI 1.1–9.7) or diploma level (35%) (OR = 5.7; 95% CI: 1.8–18.0). Physicians of rural origin were more likely to practise FGC; however, this was not statistically significant.

Interrelations and determinants of practice

There was a negative correlation between knowledge and both approval and practice (Table 5): the more the physicians knew about the consequences of FGC, the less they agreed with it or practised it. On the other hand, there was a positive correlation between approval and practice. Half of the approving physicians lacked knowledge of the consequences of FGC (OR = 7.4; 95% CI: 4.4–12.3), and one-third of the practising physicians lacked knowledge about the consequences (OR = 7.9; 95% CI 3.1–20.1) and half of them approved the practice (OR = 9.9; 95% CI: 4.3–22.9)

The majority (81%) of physicians practising FGC were influenced by their culture (OR = 3.1; 95% CI: 1.4–8.0) (Table 6). While lack of knowledge was a factor for only about one-third of the respondents (35%), it had 8 times the influence (OR = 7.9; 95% CI: 3.1–20.1). Financial benefit was a factor for 30% of physicians, however, it was not an influencing determinant. Cultural influence was statistically significant among 87% of those who lacked knowledge (OR = 4.9; 95% CI: 1.4–17.1).

Table 4 **Practice of female genital cutting (FGC) among the studied physicians (*n* = 193)**

Item	No.	%
Practice FGC		
No	156	80.8
Yes	37	19.2
Reasons for practice (n = 37)		
Convinced	19	51.4
For profit	11	29.7
Harm reduction	7	18.9
*Place of practice FGC (*n = *37)*		
Clinic	24	64.9
Hospital	8	21.6
Home	5	13.5
*Use of anaesthesia (*n = *37)*		
Local	24	64.9
General	13	35.1
None	0	0.0
*Instruments used (*n = *34)*		
Scalpel	29	85.3
Scissors	16	17.6
Razor	0	0.0
*Average fees for FGC (LE) (*n = *32)*		
None	1	3.1
< 150	20	62.5
150–500	9	28.1
500+	2	6.3
*Ever had postoperative complications (*n = *35)*	12	34.3
*Reasons for not practising FGC (*n = *156)*		
Not convinced	127	81.4
Not specialized	31	19.9

LE = Egyptian pounds.

Discussion

In 1994, the Egyptian Ministry of Health issued a decree that lifted the 35-year ban on FGC in public hospitals and asked state hospitals to set aside 1 day a week for performing the procedure. The government claimed this move was intended to ensure that the procedure was performed by trained physicians under hygienic conditions. In September 1994 FGC in Egypt changed from an accepted custom to a political hot topic when the news network CNN featured the circumcision of a 9-year-old girl from Cairo. The film embarrassed Egyptians and fuelled an outcry by women's groups and nongovernmental organizations [*25*].

The 1994 decree was reversed in 1996 and Egyptian state and private hospitals are now banned from performing it. Egyptian law prohibits anyone from performing FGC, and any physician or health worker who causes permanent damage to a girl may face 3–10 years in prison. However, challenges include a suit filed in court by a group of professors of obstetrics and gynaecology who claimed that prohibiting the procedure in a clinical setting would result in clandestine operations that endanger women's health [*26*]. One-third of the respondents in the present study did not approve the banning of the practice by law and some performed FGC to prevent it being done in secret.

The results of the present study showed that over 80% of the physicians did not approve or practise FGC. It is interesting to note that the number practising FGC was slightly higher than those approving it (37 versus 34) and that only half of those (19) were practising it from conviction. The other half were practising it for profit or harm reduction.

Women's support for FGC as a religious requirement declined from 73% in 2000 to 61% by 2005 [*17–20*]. Many prestigious Islamic scholars and the current Egyptian Grand Mufti have denied it is a religious requirement. Islamic ruling was reviewed in 1996 and it was concluded that the practice "cannot be legitimate under Islamic law" and that "female circumcision is neither required nor is it an obligation nor a sunna" [*27*]. It is expected that cultural misconceptions about FGC as a religious requirement

might exist among rural and less-educated women, but not among a highly educated group such as physicians. While 83 physicians in this survey (43% of the total) correctly identified FGC as not a religious requirement, the 28 (15%) who approved it for religious reasons were the majority of those approving it.

Those physicians who approved and practised FGC were mostly from Upper Egypt and of rural origin. According to the 2005 demographic and health survey, Upper Egypt had the highest rate of people expecting their daughters to be circumcised (78% and 83% in rural areas versus 69% among the total Egyptian population) [*20*].

Abolishing FGC requires that the sociocultural dynamics of the practice be well understood if behavioural change is to be accomplished [*28*]. This study showed that cultural influences combined with lack of knowledge about the consequences of FGC were the main reasons behind physicians' practice of FGC. The dilemma of the Egyptian health profession results from uncertainty about the religious requirement and the contradictory government decrees. Physicians who defended the practice did not give scientific evidence of its benefits. They cited it as a cosmetic procedure or harm reduction process. Many claimed that surgical measures would prevent consequences such as bleeding, shock and infection. They argued that complications can happen as in any other operation, ignoring the fact that as a banned cultural practice FGC has no standardized surgical procedure to minimize complications.

A previous study by this researcher found that introducing the subject of FGC into the medical curriculum led to changes in students' attitudes towards its practice [*23*]. The majority of the physicians in the present study (91%) supported introducing the subject into medical school curricula.

A review of published sources between 1997 and 2005 showed that FGC is associated with some health consequences but that no statistically significant associations were documented for a number of health conditions [*29*]. Concerning sexuality, most existing studies suffer from conceptual and methodological shortcomings, and the available evidence does not support the hypothesis that FGC destroys sexual

Table 5 **Inter-relations and correlation between knowledge, approval and practice of female genital cutting (FGC) among the studied physicians (*n* = 193)**

Variable	Practice				Approval			Knowledge
	%	OR (95% CI)	*r*	*P*-value	%	OR (95% CI)	*r*	*P*-value	*r*
Knowledge	64.9	7.9 (3.1–20.1)	–0.35	< 0.001	50.0	7.4 (4.4–12.3)	–0.54	< 0.001	1.0
Approval	51.4	9.9 (4.3–22.9)	0.43	< 0.001	–	–	1.00	–	–
Practice	–	–	1.00	–	–	–	–	–	–

r = Pearson correlation;
OR = odds ratio; CI = confidence interval.

Table 6 **Determinants of practice of female genital cutting among the studied physicians (*n* = 193)**

Determinant	%	OR (95% CI)	*P*-value	Total no.	%
Cultural influences	81.1	3.1 (1.4–8.0)	0.006	118	61.1
Financial benefits	29.7	0.1 (0.1–0.2)	< 0.001	11	5.7
Lack of knowledge	35.1	7.9 (3.1–20.1)	< 0.001	23	11.9

OR = odds ratio; CI = confidence interval.

function or precludes enjoyment of sexual relations. Thus, in the absence of scientific evidence so far in research and medical education, physicians are under the influence of community pressure.

Limitations of the study

The use of a mailed survey meant that data collection took a long time and it was difficult to identify the characteristics of nonrespondents. The study collected information regarding a banned practice, which may have led to a lower response rate.

Conclusion and recommendations

The ambiguity of the status of FGC as a religious requirement confused many doctors. It is recommended that FGC and its consequences is introduced into the undergraduate medical curriculum and that training programmes for physicians are developed focusing on religious and cultural aspects.

References

1. Strickland JL. Female circumcision/ female genital mutilation. *Journal of pediatric and adolescent gynecology*, 2001, 14(3):109–12.
2. Morison L et al. The long-term reproductive health consequences of female genital cutting in rural Gambia: a community-based survey. *Tropical medicine and international health*, 2001, 6(8):643–53.
3. Jones H et al. Female genital cutting practices in Burkina Faso and Mali and their negative health outcomes. *Studies in family planning*, 1999, 30(3):219–30.
4. Al-Hussaini TK. Female genital cutting: types, motives and perineal damage in laboring Egyptian women. *Medical principles and practice*, 2003, 12(2):123–8.
5. Fernandez-Aguilar S, Noel JC. Neuroma of the clitoris after female genital cutting *Obstetrics and gynecology*, 2003, 101(5 Pt 2):1053–4.
6. Dorkenoo E. Combating female genital mutilation: an agenda for the next decade. *World health statistics quarterly*, 1996, 49(2):142–7.
7. Karim M. Female genital mutilation: an endemic African practice effect on sex behaviour. In: Fayad MM et al., eds. *Safe motherhood in Africa*. Cairo, Pan-African Federation for Maternal and Child Health, 1997:213–4.
8. Almroth L et al. Male complications of female genital mutilation. *Social science and medicine*, 2001, 53(11):1455–60.
9. Refaat A et al. Female genital mutilation and domestic violence among Egyptian women. *Journal of sex and marital therapy*, 2001, 27(5):593–8.

10. Obermeyer CM. The health consequences of female circumcision: science, advocacy, and standards of evidence. *Medical anthropology quarterly*, 2003, 17(3):349–412.

11. Mackie G. Female genital cutting: a harmless practice? *Medical anthropology quarterly*, 2003, 17(2):135–58.

12. El-Gibaly O et al. The decline of female circumcision in Egypt: evidence and interpretation. *Social science and medicine*, 2002, 54(2):205–20.

13. Khattab H. *Women's perception of sexuality in rural Giza*. Cairo, Population Council Regional Office for West Asia and North Africa, 1996 (Monographs in Reproductive Health No. 1).

14. *Female genital mutilation: report of a WHO technical working group.* Geneva, World Health Organization, 1995.

15. Cook RJ, Dickens BM, Fathalla MF. Female genital cutting (mutilation/circumcision): ethical and legal dimensions. *International journal of gynaecology and obstetrics*, 2002, 79(3):281–7.

16. Yount KM. Like mother, like daughter? Female genital cutting in Minia, Egypt. *Journal of health and social behaviour*, 2002, 43(3):336–58.

17. El-Zanaty F, Way A. *Egypt 1995 final report*. Calverton, Maryland, ORC Macro, 1996.

18. El-Zanaty F, Way A. *Egypt 2000 final report*. Calverton, Maryland, ORC Macro, 2000.

19. El-Zanaty F, Way A. *Egypt 2003 interim demographic and health survey*. Cairo, Egypt, Ministry of Health and Population/ National Population Council/El-Zanaty and Associates, and Calverton, Maryland, ORC Macro, 2004.

20. El-Zanaty F, Way A. *Egypt 2005: final report*. Calverton, Maryland, ORC Macro, 2006.

21. Mandara M. Female genital cutting in Nigeria: views of Nigerian doctors on the medicalization debate. In: Shell-Duncan B, Hernlund Y, eds. *Female "circumcision" in Africa: culture, controversy and change*. Boulder, Colorado, Lynne Rienner Publishers, 2000.

22. Shell-Duncan B. The medicalization of female "circumcision": harm reduction or promotion of a dangerous practice? *Social science and medicine*, 2001, 52(7):1013–28.

23. Refaat AH et al. Attitudes of medical students towards female genital mutilation. *Journal of sex and marital therapy*, 2001, 27(5):589–91.

24. Allam MF et al. Factors associated with the condoning of female genital mutilation among university students. *Public health*, 2001, 115(5):350–5.

25. Wiens J. Female circumcision is curbed in Egypt. *British medical journal*, 1996, 313:249.

26. Abd El Hadi A. A step forward for opponents of female genital mutilation in Egypt. *Lancet*, 1997, 349:129–30.

27 Al-Sabbagh M. *Islamic ruling on male and female circumcision*. Alexandria, World Health Organization, Regional Office for the Eastern Mediterranean, 1996.

28. Gruenbaum E. Socio-cultural dynamics of female genital cutting: research findings, gaps, and directions. *Culture, health and sexuality*, 2005, 7(5):429–41.

29. Obermeyer CM. The consequences of female circumcision for health and sexuality: an update on the evidence. *Culture, health and sexuality*, 2005, 7(5):443–61.