

Review

Female Genital Cutting: A Persistent African Health Challenge

Mohamed Nabih EL-Gharib, PhD*

Professor of Obstetrics and Gynecology, Faculty of Medicine, Tanta University, Egypt

*Correspondence to: Mohamed Nabih EL-Gharib; Professor of Obstetrics and Gynecology, Faculty of Medicine, Tanta University, Egypt;

E-mail: mohgharib2@hotmail.com

Received: December 26th, 2018; Revised: December 29th, 2018; Accepted: December 27th, 2018; Published: January 22nd, 2019

Citation: EL-Gharib MN. Female genital cutting: A persistent african health challenge. *Gyne and Obste Open A Open J*. 2019; I(1): 1-6

Abstract

Female genital mutilation or female circumcision is a worldwide problem, though it is universally prohibited. The definition, historical origin, indications and types of mutilations, technic of performance, and complication are discussed in this article.

Key words: *peritoneal, dialysis, catheter, complications, laparoscopy, omentectomy.*

DEFINITION

Female genital mutilation (FGM), also referred to as 'female circumcision' or 'female genital cutting', refers to all procedures involving partial or total removal of the external female genitalia or other injuries to the female genital organs for non-medical reasons.¹ It is a tradition performed in some patriarchal societies to control female sexuality and chastity, reduce women's sexual pleasure, increase men's sexual pleasure and/or increase the sexual attractiveness the genitalia.²

HISTORICAL REVIEW

The historical origin of FGM is still unclear. However, we emphasize that its origins predate predates Christianity, Judaism, and Islam. Also, it is worthy to mention that Islamic communities, Christianity, and Judaism also practice female circumcision. The holy Koran, the Bible or the Torah did not arrive at any mention of female circumcision.³

Allasraeliat said that Sarah swore to cut three of Hager, Abraham (peace be upon him) said to her: can you vindicate your right? Did she say: how to make? He said: prick her ears and circumcise her. In that location is no conclusive indication to show where female circumcision first originated, but it is clear that circumcised women have been set up among the mummies of ancient Egyptians. In the middle of fifth century B.C. Herodotus (the Greek historian) during his travel discovered that the Egyptians were using male and female circumcision. A Greek papyrus dated 163 B.C. in the British Museum refers to the operations performed on young women in Memphis at the age when they received dowries. Strabo, a Greek geographer, also reported the circumcision of

young ladies as a custom of Egyptian women in 25 B.C.⁴

The Greek geographer Strabo visited Egypt in around 25 B.C.E. and mentioned that the Egyptians circumcised every child that is born and excised the females. The excision of the females probably consisted of the clitoris and labia minora.⁵

Female circumcision is believed to have originated in ancient Egypt during the rule of the Pharaohs. The first confirmed instance of this practice dated back to female mummies in 484 B.C.⁶ The Greek historian Herodotus confirmed the practice of female circumcision in Egypt during his mid-fifth-century B.C. visit to the country. Nile Nubians circumcised nine- and ten-year-old girls with either Sanaa or Pharaonic types.⁷

The Egyptian history the mark of circumcision represented slavery and defilement. Certainly, the ancient Egyptians were known to have defiled captured slaves through various forms of mutilation, such as castration or the amputation of other appendages. Circumcision, however, might have been a more cost-effective way to permanently mark human property without the morbidity (and, therefore, loss of productivity) of a slave marked by some other mutilation.⁸

A Greek papyrus from 163 B.C. made specific reference to operations performed on girls in Memphis (i.e., the ruined capital of ancient Egypt, located south of present-day Cairo) when they were of age to receive their dowry.⁹

The Greek geographer Agatharchides of Cnidus also reported

that the practice of excision was prevalent among tribes, on the western coast of the Red Sea. Moreover, the Greek geographer Strabo reported the ritual practice of female circumcision when he visited Egypt in 25 B.C. More specifically, Strabo distinguished “between the operations of circumcision and excision”.¹⁰

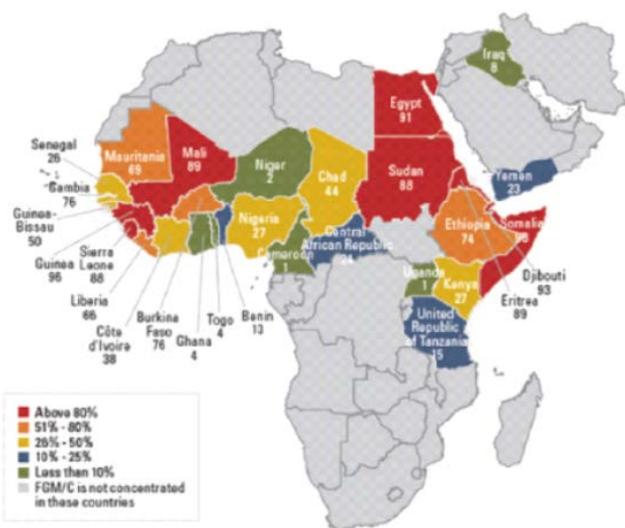
Dorkenoo and Elworthy suggest that there are two possible interpretations about its origins: it either developed in Egypt and spread or originated as an African tribal puberty rite that extended to places such as Egypt.¹¹

It is a bit more difficult to uncover the historical origin of “infibulation,” but it dates back to at least the Romans and a procedure they performed on the slaves. “The Romans, to prevent sexual intercourse, fastened a ‘fibula’ or ‘clasp’ through the large lips of women”.⁴

PREVALENCE

Female genital mutilation/cutting is a widely used pervasive practice, it is estimated that more than 200 million girls and women at least in 30 countries have gone under the female genital mutilation, including 92 million in Africa.¹² An FGM prevalence of 87.2% among all women aged 15-49 in Egypt (Table 1). It has been documented in 28 African countries and in some countries in Asia and the Middle East. Up to this date, researches indicated that it is being experienced in some developed countries too.¹³ The prevalence of FGM in Central and West African countries varies from 82.5% in Ethiopia, 73.4 in Sudan, 69% in Mali, 34% in Nigeria and 1% in Cameroon, Ghana, and Niger. FGM is also common in Senegal; Tanzania, Eritrea, Ogaden, Djibouti, Somalia and Kenya (Figure I).¹⁴

Figure I. Percentage of girls and women aged 15 to 49-years who have undergone FGM, by country



Source : UNICEF, 2013

Table 1. Annual percentage increase of decrease in prevalence of FGM [26]

Country	Survey Period	Survey	Sample size	Prevalence	Number mutilated	Percent change	Trends
Egypt	1995-2014	6	86287	95.10	82059	0.0004	-0.0003

According to reports from the United Nations Children’s Fund (UNICEF) and others, Ethiopia has the tenth highest prevalence of FGM in the world (74.3%) and is one of the countries with the highest number of infant girls undergoing some form of FGM.¹⁵

However, there is increasingly common in clusters in the Western World, due to migration from these endemic countries either for economic reasons, or when residents flee from areas of civil unrest. In 2006, the Foundation for Women’s Health, Research, and Development (FORWARD), in collaboration with the UK Department of Health, Estimated that there are nearly 66,000 women with FGM/C is living in England and Wales, nearly 16,000 girls under age 15 years at high risk of type III FGM/C and over 5000 at high risk of types I-II. The highest estimated prevalence per region is thought to be in London, with 6.3% prevalence in inner London and 4.6% prevalence in outer London.¹⁶

Despite the growing awareness of the practice, the prevalence of FGM/C ranges from 0.6% up to 98%.¹⁷ Abdalla (1982) suggests that female circumcision has been practiced on every continent. It occurs in Asian countries and among Muslims in India, Pakistan, Malaysia, and Indonesia. Reportedly, it occurs among some indigenous groups in Latin America, including those within Mexico, Brazil, Colombia, and Peru. Cases have also been reported in the Middle Eastern countries of Qatar, Yemen, Israel, Bahrain, Oman, and the United Arab Emirates.¹⁸

FGH is also practiced among immigrant populations in such countries as Australia, the United States, the United Kingdom, France, Italy, Belgium, Norway, Sweden, and Finland. In the United States alone, over 7,000 women emigrate annually from countries that routinely practice female circumcision.¹⁹

Maher (1996) claims FGM is practiced in over 40 countries.²⁰ Recent estimates show that in 2012, around 513,000 women and girls in the United States were at risk for FGM/C or its consequences.²¹

FGM is illegal in many countries of the world.²² However, the highly entrenched sense of social obligation overrides any potentially positively modifying influence of legal and moral norms, thereby fuelling the continuation of this practice. The eradication of FGM has been prioritized, as a key issue of the African Union,²³ and the global community.²⁴

Although FGM/C has been illegal in Egypt for almost 50 years, previous literature 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. Religious, traditional, sexual and hygienic reasons have been reported by advocates of FGM/C, which could explain its high prevalence rates and the intention of many mothers to encourage the continuation of the practice.^{25,26}

WHO PERFORMS FGM?

FGC/M is usually performed by traditional healers, barbers or Day as on young girls or infants reinfibulation is usually performed by doctors or midwives. A worrying trend is that FGM/C is increasingly performed by health professionals.²⁷

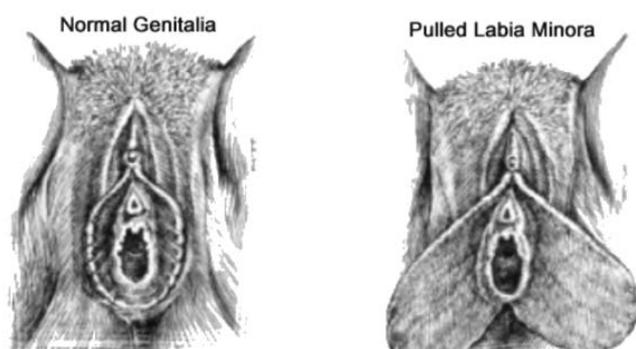
THE PROCEDURES OF FGM

FGM in Egypt is usually performed at any time between birth and the age of 17, with most girls undergoing the practice at or before puberty but commonly performed under the age of six years. FGM is carried out using special knives, scissors, razors, or pieces of glass. On rare occasions, sharp stones have been reported to be used (e.g. In eastern Sudan), and cauterization (burning) is practiced in some parts of Ethiopia. Fingernails have been used to pluck out the clitoris of babies in some areas in the Gambia. The instruments may be re-used without being cleaned. The operation is usually performed by an elderly woman of the village specially designated this task, who may also be a traditional birth attendant (TBA). In some countries, FGM/C is increasingly performed by healthcare providers, which is alarming. Medicalization of FGM/C is proposed by some health professionals to reduce the incidence of its complications. Anesthesia is rarely used and the girl is held down by a number of women, frequently including her own relatives. The procedure may take 15 to 20 minutes, depending on the skill of the operator, the extent of excision and the amount of resistance put up by the girl.

The wound is dabbed with anything from alcohol or lemon juice to ash, herb mixtures, porridge or cow dung, and the girl's legs may be bound together until healing is completed. In some areas (e.g. parts of Congo and mainland Tanzania), FGM entails the pulling of the labia minora and/or clitoris over a period of about 2 to 3 weeks. The procedure is usually started by an elderly woman designated this task, who places sticks of a special type to hold the stretched genital parts so that they do not revert back to their original size.

Sometimes, the girl is instructed to pull her genitalia every day, to stretch them further, and to add additional sticks from time to time to hold the stretched parts. Usually, no more than four sticks are used, as further pulling and stretching would make the genitals unexceptionally long (Figure II).

Figure II. Percenta



INDICATIONS

- The reasons given for this practice have included religious demand, cleanliness, purifications, family honor, a sense of belonging and enhancement of marital opportunities because a circumcised

woman sexually more pleases to her husband. An uncircumcised woman would become a social outcast in her community. She would be seen as a girl regardless of her age.²⁸

- It guarantees premarital virginity and, since it is supposed to reduce a woman's libido, helps her resist 'illicit' sex. The pressure of social convention tends to perpetuate the practice.
- From the 19th into the mid-20th century, doctors in Russia, England, France, and the United States performed FGM as a treatment for hysteria, lesbianism, and masturbation.

TYPES OF FEMALE GENITAL MUTILATION

The World Health Organization (2008) has classified FGM into four types:²⁹

- Type I: partial or total removal of the clitoris and/or the prepuce (Type Ia, removal of the clitoral hood/prepuce only, appears to be rare and is generally performed in medical rather than traditional settings; Type Ib, removal of the clitoris with the prepuce) as depicted in figure III.
- Type II: Partial or total Removal of the clitoris and the labia minora, with or without excision of the labia majora (Type IIa, removal of the labia minora only; Type IIb, partial or total removal of the clitoris and the labia minora, Type IIc, partial or total removal of the clitoris, the labia lb, minora the labia majora) as shown in figure IV.
- Type III (infibulation): Narrowing of the vaginal orifice with the creation of a covering seal cutting and positioning the labia minora (Type the labia majora (Type IIIb), or both, with or without excision of the clitoris (see figure V).
- Type IV: Unclassified, all other harmful procedures of the female genitalia for non-medical purposes.

THE VIEW OF RELIGIONS ON FGM

- Contrary to the belief that it is a practice carried out by Muslims only, it is also practiced by Christians and a minority group of Ethiopian Jews. However, FGM is neither mentioned in the Torah, nor in the Gospels and – like in Islam – bodily mutilation is condemned by both faiths.

- Granted the fact that some Sunni Muslims, legitimate FGM by quoting a controversial hadith (a saying ascribed to the Prophet Mohammed) in which the Prophet allegedly did not object to FGM provided cutting was not too severe^{5,6} and that the least Invasive type of FGM (partial or full removal of the clitoris and/or the prepuce) is likewise called "Sunna Circumcision"³⁰ FGM/C has no religious basis what so ever and has been condemned by Al-Azhar.²⁷

- Granting to the Hebrew Bible, circumcision is taken for all male Jewish children in observance of God's commandment to Abraham (Genesis 12-17), female circumcision was never allowed in Judaism, according to the Oxford Dictionary of the Jew-ish Religion.³¹

- Literature dealing with the Christian view on FGM is very scarce, however, Christian authorities unanimously agree that FGM has no basis in the spiritual texts of Christianity.³²

COMPLICATIONS

Complications of FGM depend on: type (level/classification) performed, the ability of the circumciser, age of the girl, operating conditions (e.g. Lighting, sanitary environment), an instrument used (razors, blunt/sharp knives, or jagged rocks), presence of antiseptics, use of traditional bleeding, reducing products, in addition to other variables. Complications can also be classified as physical (immediate, late, and obstetrical), psychological, and psychosexual. There are two forms of complications that occur during and after the procedure:

Immediate Complications: During and immediately following the procedure, hemorrhage, shock, severe pain, infection, damage to adjacent tissue, tetanus, urinary problems -- incontinence, dribbling, recurrent infections, broken bones, sepsis and septicemia, HIV and Hepatitis B infection. Necrotizing fasciitis has been reported. Deaths from FGM have been reported. Other immediate reported complications include damage to other adjacent organs and incomplete healing.

Long Term Health Consequences

FGM causes, complications throughout the life span and these can broadly divide into three main areas: Gynecological, Obstetrical, Psychological, sexual complications.

Gynecological

Long term gynecological concerns that have been linked to FGM include infection, scarring, and keloid, menstrual difficulties, urinary symptoms, and infertility.

Infection: FGM has been implicated in long term infections, including chronic genital abscesses, vaginal infections and blood-borne infections such as Hepatitis B and HIV. A systematic review examined Infection rates in 22 052 African women with FGM of all main types.³³ Types of infections identified included urinary tract infections, genitourinary tract infections, abscess formation, septicemia, and HIV. Infections were more frequent in who had undergone Type III FGM.

Additionally, a literature review of articles revealed that FGM is a particular risk factor for genitourinary disorders It has been suggested that FGM increases the risk of transmission of Hepatitis B, C, and HIV by the use of unsterile and shared instruments. However, although this is plausible, there are no epidemiological studies to support this and in many FGM practicing countries Hepatitis B is endemic and rates of HIV can be high.³⁴

Genital Complications: Genital scarring is common but can be very variable due to the extent of tissue removed and immediate complication such as infection. Painful and unsightly scarring due to the keloid has been reported. Inclusion cysts over the clitoral area can obstruct the vagina and cause pain. They can be very large and require surgical excision.

Menstrual Complications: Painful and prolonged periods have been attributed to FGM, but the mechanisms are unknown. It is possible that a very narrow vaginal opening might slow down menstrual flow and case reports of hematocolpos do exist.

Urinary Complications: Damage to the urethra during FGM may lead to fistula and urethral strictures as shown in figure VI. Poor urinary flow and recurrent urinary tract infections have been reported in up to 22% of women following FGM and are thought to be due to obstruction of the urethral opening by scar tissue sealing the vagina. It would seem logical to expect that these symptoms are relieved by deinfibulation where the scar tissue is incised but there are no studies to confirm this.³⁵

Infertility: It has been suggested that FGM leads to infertility, although there is little good data to support this. One study has suggested a link between more extensive FGM and primary infertility has been suggested. Difficult or painful intercourse because the vagina is infibulated, has been suggested as a possible mechanism, as has ascended pelvic infection at the time of FGM.³⁶

Obstetric Complications: FGM increased the risks of prolonged labor, postpartum hemorrhage, perineal trauma, and Caesarean section.³⁷ In addition, there was an increased risk of neonatal resuscitation, low birth rate, stillbirth and early neonatal death with FGM thought to lead to an extra 1–2 perinatal deaths per 100 deliveries.³⁸ Women who have undergone FGM suffer more frequently from prolonged, difficult labor, have a higher rate of obstetric lacerations, more often require instrumental delivery, and have increased rates of obstetric hemorrhage. This may be due, in part, to the inelasticity of scar tissue. This conclusion is supported by evidence that more invasive forms of FGM cause increased scarring and more significant delays in the second stage of labor.³⁹ Other studies have also reported an increased rate of perineal tears. [30] and high rates of episiotomy particularly with Type III FGM (infibulation).⁴¹

Psychological Complications: Small studies have identified depression, anxiety and post-traumatic stress disorder (PTSD).⁴² Behrendt and Moritz carried out structured clinical interviews with 47 Senegalese women, assessing their mental health status. Twenty-three of these had undergone FGM as children, most commonly between 4 and 10-years. They found a high prevalence of posttraumatic stress disorder (30.4%) and other psychiatric syndromes, including memory problems (47.9%) in women with FGM. The prevalence of mental health problems in women with FGM was statistically significant compared to the comparison subjects.⁴³

Sexual Complications: There is increasing evidence that FGM damages sexual function and this would seem logical given the removal of sexually sensitive tissue such as the clitoris. Alsibani and Rouzi recruited 130 sexually active women with FGM and 130 sexually active women without FGM in Jeddah, Saudi Arabia. Each participant completed a version of the Female Sexual Function Index (FSFI) questionnaire translated into Arabic. The results showed no group difference in mean desire score or pain score. However, there were statistically significant differences between the two groups in their scores for arousal, lubrication, orgasm, and satisfaction, as well as the overall sexual function score.⁴⁴ A study on UK women depicted a significantly reduced sexual quality of life, based on the Sexual Quality of Life-Female (SQOL-F) questionnaire.⁴⁵

Berg and Denison meta-analysis results showed that women who had been subjected to FGM were 52% more likely to report dyspareunia, more than twice as likely to report the absence of sexual desire, and a third of recipients reported reduced sexual satisfaction.⁴⁶ Recent surgical reports claim that clitoral reconstruction may restore sexual function.⁴⁷

CONCLUSION

In the end, we conclude that female genital mutilation constitutes tragic health and human rights issue of girls and women, the effects of which do not only bear upon its victims, but its repercussion reaches the other spouse, the household and the community at large. It bears to be condemned by all, and at last but not least we suffer to unite all those media, spiritual and health authorities to eliminate that pattern, which is considered an affront on human rights and an act of violence against women and young girls.

CONFLICT OF INTERESTS

The author declares no conflict of interests.

REFERENCES

1. Female Genital Mutilation/Cutting: A Global Concern UNICEF, New York, 2016.
2. Abdulcadir J, Margairaz C, Boulvain M and Irion O. Care of women with female genital mutilation/cutting. *Swiss Med Wkly*. 2011; 140: w13137. doi: [10.4414/smw.2010.13137](https://doi.org/10.4414/smw.2010.13137)
3. Ahmady KA. Comprehensive research study on female genital mutilation/cutting (FGM/C) in Iran – 2015.
4. El Dareer A. Epidemiology of female circumcision in the Sudan. *Trop Doct*. 1983; 13(1): 41-45. doi: [10.1177/004947558301300114](https://doi.org/10.1177/004947558301300114)
5. Strabo, Geographica, XVII, II, 5. In the Strabo of the Loeb Classical Library published in 1932 and revised and reprinted in 1949.
6. Slack AT. Female circumcision: A critical appraisal. *Human Rights Quarterly*. 1988; 10(4): 437-486. doi: [10.2307/761916](https://doi.org/10.2307/761916)
7. Colón AR, Colón PA. *A History of Children*. A socio-cultural survey across millennia. Westport, USA: Greenwood Press. 2001.
8. Kaicher DC, Swan KG. A cut above: circumcision as an ancient status symbol. *Urology*. 2010; 76(1):18-20. doi: [10.1016/j.urology.2010.01.056](https://doi.org/10.1016/j.urology.2010.01.056)
9. Kouba LJ, Muasher J. Female circumcision in Africa: An overview. *African Studies Review*. 1985; 28 (1): 95-110. doi: [10.2307/524569](https://doi.org/10.2307/524569)
10. Bryk F. *Circumcision in Man and Woman*. Its history, psychology and ethnology. New York, USA: American Ethnological Press. 1934.
11. Dorkenoo E, Elworthy S. Female Genital Mutilation: Proposals for change. London, USA: Minority Rights Group International. 1992.
12. Ohchr U, Undp U. Eliminating female genital mutilation: An inter-agency statement. Geneva: WHO. 2008.
13. Feldman-Jacobs C, Clifton D. Female genital mutilation/cutting: data and trends. Population Reference Bureau, USAID, 2010.
14. Catania L, Abdulcadir O, Puppo V, Verde JB, Abdulcadir J, Abdulcadir D. Pleasure and orgasmin women with female genital mutilation/cutting (FGM/C). *J Sex Med*. 2007; 4(6): 1666-1678. doi: [10.1111/j.1743-6109.2007.00620.x](https://doi.org/10.1111/j.1743-6109.2007.00620.x)
15. United Nations Children's Fund. 29 countries, more than 125 million girls and women. Website: http://www.unicef.org/protection/files/00-FMGC_infographiclow-res.pdf. Accessed January 10, 2013.
16. Dorkenoo E, Morison L, Macfarlane A. A statistical study to estimate the prevalence of female genital mutilation in England and Wales: summary report. Foundation for Women's Health, Research and Development (FORWARD); 2001.
17. Mahmoud MIH. Effect of female genital mutilation on female sexual function, Alexandria, Egypt. *Alexandria J Med*. 2016; 52(1): 55-59. doi: [10.1016/j.ajme.2015.03.003](https://doi.org/10.1016/j.ajme.2015.03.003)
18. Abdalla, Raquiya HD. *Sisters in Affliction: Circumcision and Infibulation of Women in Africa*. London, USA: Zed Press. 1982.
19. Burstyn L. Female circumcision comes to America. *Atlantic Monthly*. 1995; 276(4): 28-35.
20. Maher RH. (1996). Female genital mutilation: The struggle to eradicate this rite of passage. *Human Rights*. 1996; 23 (4): 12-15.
21. Goldberg H, Stupp P, Okoroh E, Besera G, Goodman D, Danel I. Female genital mutilation/ cutting in the United States: Updated estimates of women and girls at risk, 2012. *Public Health Rep*. 2016; 131(2): 340-347. doi: [10.1177/003335491613100218](https://doi.org/10.1177/003335491613100218)
22. Rahman A, Toubia N. *Female Genital Mutilation*. In: A Practical Guide to Worldwide Laws & Policies. (Eds). Rasheed SM, abed-Ellah AH, Yousef FM. London, USA: Zed Books. 2011.
23. AU. Decision on the Support of a Draft Resolution at the Sixty Sixth Ordinary Session of the General Assembly of the United Nations to Ban Female Genital Mutilation in the World. African Union, Malabo, Equatorial Guinea; 2011.
24. UNFPA/UNICEF, 2011. Joint Programme on Female Genital Mutilation/Cutting Accelerating Change Annual Report. New York, UNFPA, UNICEF. UNICEF, 2011.
25. Arafa AE, Elbahrawe RS, Shawky SM, Abbas AM. Epidemiological and gynecological correlates with female genital mutilation among Beni-Suef University students; cross sectional study. *Middle East Fertility Society Journal*. 2018; 23: 184-188. doi: [10.1016/j.mefs.2017.11.005](https://doi.org/10.1016/j.mefs.2017.11.005)
26. Kandala NB, Kompa PN. *Female Genital Mutilation Around*

The World. Analysis of Medical Aspects, Law and Practice. Switzerland: Springer Nature Switzerland AG. 2018.

27. Serour G. Medicalization of female genital mutilation/cutting. *African Journal of Urology*. 2013; 19(3): 145–149. doi: [10.1016/j.afju.2013.02.004](https://doi.org/10.1016/j.afju.2013.02.004)

28. Abusharaf RM. Unmasking tradition: A sudanese anthropologist confronts female circumcision and its terrible tenacity. *The Sciences*. 1998; 38(2): 22.

29. World Health Organization (WHO). Eliminating Female Genital Mutilation: An Interagency Statement. World Health Organization, Department of Reproductive Health and Research, Geneva. 2008.

30. Sunna circumcision. In: Segen's medical dictionary, Farlex Inc., 2012.

31. Zwi Werblowsky RJ, Wigoder G. *Oxford Dictionary of the Jewish Religion*. New York, USA: Oxford University Press. 1997.

32. El-Damanhoury. The jewish and christian view on female genital mutilation. *African Journal of Urology*. 2013; 19: 127-129. doi: [10.1016/j.afju.2013.01.004](https://doi.org/10.1016/j.afju.2013.01.004)

33. Iavazzo C, Sardi TA, Gkegkes ID. Female genital mutilation and infections: A systematic review of the clinical evidence. *Arch Gynecol Obstet*. 2013; 287 (6): 1137-1149. doi: [10.1007/s00404-012-2708-5](https://doi.org/10.1007/s00404-012-2708-5)

34. Monjok E, Essien EJ, Holmes L. Female genital mutilation: potential for HIV transmission in sub-Saharan Africa and prospect for epidemiologic investigation and intervention. *Afr J Reprod Health*. 2007; 11(1): 33-42.

35. Amin MM, Rasheed S, Salem E. Lower urinary tract symptoms following female genital mutilation. *Int J Gynaecol Obstet*. 2013; 123(1): 21-23. doi: [10.1016/j.ijgo.2013.06.010](https://doi.org/10.1016/j.ijgo.2013.06.010)

36. Almroth L, Elmusharaf S, El Hadi N, et al. Primary infertility after genital mutilation in girlhood in Sudan: A case control study. *Lancet*. 2005; 366(9483): 385–387. doi: [10.1016/S0140-6736\(05\)67023-7](https://doi.org/10.1016/S0140-6736(05)67023-7)

37. WHO study group on female genital mutilation and obstetric outcome, Banks E, Meirik O, et al. Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries. *Lancet*. 2006; 367: 1835-1841. doi: [10.1016/S0140-6736\(06\)68805-3](https://doi.org/10.1016/S0140-6736(06)68805-3)

38. Berg RC and Underland V. The obstetric consequences of female genital mutilation/cutting: a systematic review and meta-analysis. *Obstet Gynecol Int*. 2013; Epub 2013.

39. Browning A, Allsworth JE, Wall LL. The relationship between female cutting and obstetric fistulae. *Obstet Gynecol*. 2010;115(3): 578-583. doi: [10.1097/AOG.0b013e3181d012cd](https://doi.org/10.1097/AOG.0b013e3181d012cd)

40. Millogo-Traore F, Kaba ST, Thieba B, Akotionga M, Lankoande J. Maternal and foetal prognostic in excised women delivery. *J Gynecol Obstet Biol Reprod*. 2007; 36: 393-398. doi: [10.1016/j.jgyn.2007.03.002](https://doi.org/10.1016/j.jgyn.2007.03.002)

41. Al-Hussaini TK. Female genital cutting: types, motives and perineal damage in laboring Egyptian women. *Med Princ Pract*. 2003; 12(2): 123-128. doi: [10.1159/000069119](https://doi.org/10.1159/000069119)

42. Vloesberg E, van den Kwaak A, Knipscheer J, van den Muijseberg M. Coping and chronic psychosocial consequences of female genital mutilation in the Netherlands. *Ethn Health*. 2012; 17(6): 677-695. doi: [10.1080/13557858.2013.771148](https://doi.org/10.1080/13557858.2013.771148)

43. Behrendt A, Moritz S. Posttraumatic stress disorder and memory problems after female genital mutilation. *Am J Psychiatry*. 2005; 162 (5): 1000-1002. doi: [10.1176/appi.ajp.162.5.1000](https://doi.org/10.1176/appi.ajp.162.5.1000)

44. Alsibiani SA, Rouzi AA. Sexual function in women with female genital mutilation. *Fertil Steril*. 2010; 93(3): 722–724. doi: [10.1016/j.fertnstert.2008.10.035](https://doi.org/10.1016/j.fertnstert.2008.10.035)

45. Andersson SH, Rymer J, Joyce DW, Momoh C, Gayle CM. Sexual quality of life in women who have undergone female genital mutilation: a case-control study. *BJOG*. 2012; 119(13): 1606-1611. doi: [10.1111/1471-0528.12004](https://doi.org/10.1111/1471-0528.12004)

46. Berg RC, Denison E. Does female genital mutilation/cutting (FGM/C) affects women's sexual functioning? a systematic review of the sexual consequences of FGM/C. *Sexual Res Social Policy*. 2012; 9 (1): 41–56. doi: [10.1007/s13178-011-0048-z](https://doi.org/10.1007/s13178-011-0048-z)

47. Foldes B, Cuzinb B, Andro A. Reconstructive surgery after female genital mutilation: A prospective cohort study. *Lancet*. 2012; 380(9837): 134-141. doi: [10.1016/S0140-6736\(12\)60400-0](https://doi.org/10.1016/S0140-6736(12)60400-0)