



Medicalization of female genital mutilation among professional health care workers in a referral hospital, north-western Nigeria

Abubakar S. Umar^{*} and Oche M. Oche[†]

^{*}Correspondence: ausadiq@yahoo.com



CrossMark

← Click for updates

[†]These authors contributed equally to this work.

Department of Community Health, College of Health Sciences, Usmanu Danfodiyo University, Sokoto, Nigeria.

Abstract

Background: Although progress has been made in reducing the magnitude of female genital mutilation/cutting (FGM/C), however, its practice is still prevalent in some parts of Africa and Asia. More disturbing is the fact that professional health workers (PHW) were reported to be increasingly conducting FGM/C. This study aimed to identify the predictors of PHW practicing FGM/C in Sokoto, Nigeria. It will contribute to the body of knowledge on FGM/C towards its elimination.

Methods: The study was a descriptive cross-sectional design carried out amongst female health workers at the Usmanu Danfodiyo University Teaching Hospital Sokoto, North Western Nigeria. A total of 100 questionnaires were analysed using SPSS statistical software version 18. The outcome variable was practice of FGM/C and logistic regression models on predictors of medicalization of FGM/C among professional health workers were conducted.

Results: Overall, 75(75%) of respondents' had adequate knowledge with a mean score of 76.4+3. However, only 34% of the respondents have adequate knowledge on types of FGM/C which was statistically associated with the duration of practice ($X^2=4.74$, $df=1$, $P=0.03$). Seven of the respondents (7%) have indicated that they have participated in the decision making process, and or directly in the conduct of FGM/C. Out of the seven respondents who have practiced FGM/C, none was within the past 12 months or conducted FGM/C in public health institution. The main predictors of practicing FGM that were statistically significant was tribe (OR=10.48, $p=0.02$, 95% CI=1.448-75.983) and attitude of respondents towards FGM/C (OR=1.053, $p=0.023$, 95% CI=1.007-1.101).

Conclusions: The study demonstrated that some PHW continued to support the practice of FGM/C and majority of the study sample had poor knowledge on the types FGM. There is the need to reinforce the topic on FGM/C during school years in order to improve their knowledge and competences. This will also ensure the provision of better quality of services to any new or old cases of FGM/C and its related complications.

Keywords: Female genital mutilation/cutting, medicalization, professional health workers, sokoto, Nigeria

Background

Female genital mutilation or female cutting/circumcision (FGM/C) is the partial or total removal of the external female genitalia and/or injury to the female genital organs for religious, cultural and other non-therapeutic reasons [1]. Although progress has been made in reducing the magnitude of the problem, however, its practice is still prevalent in some parts of Africa

and Asia [2]. Currently, it has been reported that about 125 million women and girls have undergone FGM/C in 29 African countries with 50% of these cases living in Egypt and Ethiopia [3]. The prevalence of FGM/C in Nigeria was put at between 20%-30% by UNICEF [4], while some independent researchers [5] reported the magnitude of FGM/C in Nigeria as high as 41% among women and girls. This might be plausible given the fact

that existing policies has not banned the practice of FGM/C in total [5]. However, there exist wide variations within and between the six geopolitical zones of Nigeria regarding the magnitude of the FGM/C. For instance, the prevalence is highest in the southern part of Nigeria, with prevalence among adult women of 77%, 68% and 65% in the south-south, south east and south west geopolitical zones [6]. These prevalence more than doubles what is recorded in the three northern geopolitical zones, however, the region has the worse forms of FGM/C [6]. Furthermore, Nigeria, Sudan, Ghana and Mali were reported to be countries that practice the worse forms of FGM/C [2,7].

In Africa, it has been estimated that, three million girls are at risk of experiencing FGM/C every year [8]. This means in the absence of effective intervention to reverse the current trend, the number of girl that will be exposed to FGM/C will reach 86 million globally by the end of 2030 [9]. This scenario is further underscored by a recent study in Nassarawa state where the prevalence of FGM/C was reported to be 87% among Eggon tribal communities [10].

The social determinants of FGM/C lies within the social, ethnic, religious, and spiritual factors that operates at the level of an individual, family, community and policy related issues [8,11]. Religious beliefs have been shown to influence the attitude and behaviour to FGM/C. However in Kenya and Sierra Leone, a mix finding was reported among both Christians and Muslims with some supporting it while others opposing the practice of FGM/C [12,13]. Similarly in Nigeria adherents of both Islam and Christianity were reported to practice FGM/C, although the prevalence is higher among the Christians living in the southern part of the country [6]. In general, the practice is closely associated with poverty, ignorance, low level of educational attainment, and rural communities and is usually performed by elderly women, traditional local barbers or traditional birth attendants [2,3,12-14].

However, there exists evidence that professional health workers (doctors, nurses, midwives) were reported to be increasingly conducting FGM/C [15,16]. The performance of FGM/C by professional health workers (PHW) is termed medicalization, which is basically an injury or removal of an organ of the body without any medical indication [2,3,13]. The performance of FGM/C by PHWs could be due to a low level of knowledge on global action towards the eradication of FGM/C particularly in developing countries like Sudan [15,16], the Gambia [17], Kenya [18,19], and Nigeria [20]. The need to understand the reasons for the continued supportive attitude and behaviour among PHW towards FGM/C using the constructs of the theory of reason action (TRA) forms the objective of this study. The TRA presupposes humans are rational and that the behaviours being explored are under volitional control, thereby providing a construct that links individual beliefs, attitudes, intentions, practices and behavior [21]. The understanding of issues that will strengthen volitional control using the TRA model will provide the basis for evidence based

appropriate messages and other forms of intervention using the behavioural change communication approaches in order for communities to proactively persuade their members from practices that are neither health promotive nor FGM preventive. This approach is in line with the resolution WHA61.16 passed by the World Health Assembly in 2008 [8] which among other things called for building evidence through the research on the root causes in order to fashion out evidence based interventions that will positively facilitate the elimination of FGM/C [8,22]. This position was similarly echoed by Okeke et al., [5] on the need for areas specific information gathering in order to come up with information, education and communication that will reverse the current trend. Hence, this study is aimed to identify the magnitude, pattern and factors that motivate PHWs performing FGM/C in Sokoto, Nigeria.

Methods

Study area and design

The design was a descriptive cross-sectional study carried out amongst female health workers at the Usmanu Danfodiyo University Teaching Hospital Sokoto, North Western Nigeria. The hospital is one of the referral centres in north-western part of Nigeria and renders preventive, curative and rehabilitative services. The Teaching hospital has a 650 bed capacity with staff strength of over 1,300 including 166 female nurses and midwives that are working in the departments of obstetrics and gynaecology, surgery and Community medicine.

Sample size and sampling methods

A total of 105 female nurses were selected proportionate to their population from each clinical department that are directly involved with the clinical management of FGM/C cases particularly those from the above stated department. Nurses from the department of Paediatrics, Internal medicine, and Laboratory medicine were excluded from the study. The instrument of data collection was a set of self-administered questionnaire, containing 3 sections which sought to obtain information on respondents' socio-demographic characteristics, knowledge, attitude and practice of FGM/C. The questionnaires were administered after obtaining informed consent from the respondents. A total of 100 out of the 105 questionnaires were found to be suitable for analysis giving a response rate of 98%.

Data analysis

The data was analysed using SPSS statistical software version 18. Cross tabulation of variables with level of statistical significance set at 95% confidence interval was carried out. The outcome variable was practice of FGM/C. Analysis of data started with description of data using mean and standard deviation for quantitative variables. Questions on the knowledge, attitude and practice scored with each correct response attracted one mark and zero was awarded for a wrong answer. A score of 50% and above was considered good knowledge while a score of 50% or below as poor knowledge [23].

Logistic regression was used to develop model that best predict the practice to FGM/C with the outcome variable been categorical dichotomous as practiced/never practiced FGM/C.

Ethical consideration

Ethical approval for this study was obtained from the ethical committee of the Teaching hospital.

Results

Bio-socio-demographic characteristics of respondents

The ages of the respondents ranged from 25-54 years with a mean age of 35 ± 2.3 years (Table 1). A total of 28(28%) respondents were Hausa's, 26(26%) Fulani, 22%, Igbo's, Yoruba's 16%, while other tribes constituted 8%. More than half of the respondents were Muslim (55%) and married (55%).

Most (43%) of the study subjects had practiced for 5-9 years, 24% for more than 25 years with a mean duration of practice of 11.9 ± 3.7 (Table 2).

Table 1. Age of respondents.

Age(years)	No(%)
25-29	25(25)
30-34	30(30)
35-39	18(18)
40-44	14(14)
45-49	7(7)
50-54	6(6)

Mean age= 35 ± 2.3

Table 2. Respondents' duration of practice.

Duration of practice (years)	No(%)
0-4	20(20)
5-9	43(43)
10-14	7(7)
15-19	3(3)
20-24	3(3)
≥ 25	24(24)
Total	100(100)

Mean duration of practice= 11.9 ± 3.7

Concerning the source of information about FGM/C, 45(45%) of the study subjects read it in text books, 27(27%) from Seminars/workshops, 16(16%) from Internet and 12(12%) got the information from medical journals (Table 3).

Respondents' knowledge on FGM/C

Overall, 75(75%) of respondents' had adequate knowledge with a mean score of 76.4 ± 3 . Participants have adequate knowledge on what constitutes FGM/C, and its short and long

Table 3. Knowledge of FGM/C.

Variable	Grading of knowledge		Test statistics
	Adequate knowledge ($\geq 50\%$)	Inadequate knowledge ($\leq 50\%$)	
Knowledge of FGM/C	75(75%)	25(25%)	--
Age of respondents(years)			
<40	58	15	$X^2 = 1.26$, df = 1; P=0.12 (not significant)
≥ 40	17	10	
Source of information on FGM/C			
Text books	37	8	$X^2 = 4.19$, df=3, P=0.0661 (not significant)
Seminars/workshops	22	5	
Internet	10	6	
Medical journals	6	6	
Duration of practice(years)			
<10	52	11	$X^2 = 4.47$, df=1, P=0.032 (significant)
≥ 10	23	14	
In service training on FGM/C (seminar, workshop, course)			
Yes	7	6	$X^2 = 1.28$, df=1; P=0.084 (not significant)
No	68	19	

term complications such as haemorrhage, infection, infertility, scarification, pain and psychological deficits. However, only 34% of the respondents have adequate knowledge on types of FGM/C. The adequacy of knowledge is statistically associated with the duration of practice ($X^2 = 4.74$, df=1, P=0.03). Moreover, 42(66.7%) out of the 63 respondents who had less than 10 years' experience had adequate knowledge compared to the 14(37.8%) out 37 respondents who have more than 10 years working experience. However, age of a respondent ($X^2 = 1.26$, df=1, P=0.12), source of information on FGM/C ($X^2 = 4.19$, df=3, P=0.07) and in service training on FGM/C ($X^2 = 1.28$, df=1, P=0.08) have no significant statistical association with knowledge of participants (Table 3).

Respondents' attitude and practice regarding FGM/C

Fourteen percent of the respondents have positive attitude towards the continued practice of FGM/C. Majority of the respondents (86%) consider FGM as a form of violence against women even though more than a quarter of them believe it's in line with their religious beliefs. Only seven of the respondents (7%) have indicated that they have participated in the decision making process, and or directly in conduct of FGM/C. Reasons cited included to reduce unsafer procedure compared to traditional methods (33%), promiscuity (26%), religious injunctions (15%); ethnic cultural norms (10%) and an admixture of promiscuity, religious injunctions and ethnic cultural norms (16%). Out of the seven that reported to have practiced FGM/C, none was within the past 12 months. Five

of the seven cases occurred more than 5 years ago while the remaining two cases were two and four years ago. None of the cases was conducted in public health institution.

Predictors of the practice of FGM among participants

The table below shows the result of logistic regression analysis, where practice of FGM was made the dependent variable against several independent variables as the possible predictors of practicing FGM. The main predictors of practicing FGM that are statistically significant were tribe (OR=10.48, $p=0.02$, 95% CI=1.448-75.983) and attitude of respondents (OR=1.053, $p=0.023$, 95% CI=1.007-1.101). All other variables were not statistically significant predictors ($p>0.05$) (Table 4). The model of the logistic regression used in assessing the fitting on predictability of personal characteristics and the practice of FGM among participants (Table 5).

Determinants of the practice of FGM among PHWs

The model was statistically significant χ^2 (9, N=100) 17.25; $P<0.045$ (Table 6), indicating that the model was able to

distinguished between participants who reported having or not having supported/conducted FGM. However, the model accounted for only between 11% (Cox & Snell R Square) and 17% (Nagelkerke R Square) of variability among participants and correctly classified 79.6% of cases which together with Hosmer and Lemeshow goodness of fit test indicated the model being useful with the p value of the later test of 0.995 which is larger than the alpha value of 0.05. However, only two of the predictive variables (participant tribe and family attitude to FGM) had significantly contributed to the model with p values of 0.000 for all subgroups of tribe and family attitude to FGM (Table 6). Furthermore, the model indicated that families that support the practice of FGM have the strongest influence on the practice of FGM with an odd ratio of 7.79 compared to those who do not support the practice of FGM (OR 1.26) and to any sub-groupings of tribe (OR 0.99) (Table 6). This means those in support of FGM are more than 7 times more likely to practice FGM compared to tribal or religious inclinations after controlling for other variables in the model.

Discussion

Without doubt FGM/C constitutes one of the major forms discrimination against women particularly among those with limited autonomy in terms of capacity to take decisions that affects their health. The practice or performance of FGM/C by health care professional constitutes an ethical misconduct since they are to safe guard, promote, protect and restore health [24].

In our study, the mean age of the respondents was 35 ± 2.3 years which is lower than the reported ages in the Gambia [17], Kenya [18,19], and Sudan [16]. However, it was similar to the mean age reported in studies conducted in the southern part of Nigeria [20]. The study respondents have demonstrated high level of knowledge similar to what was observed in Benin city, Nigeria [20] and in other African countries [17-19] but is far higher by more than 10 folds when compared to the level of knowledge of Nurses and midwives in eastern province of Sudan [16]. The similarity in level of knowledge reported by Onu et al., 2006 [20] could be related to the unified education policy that is implemented across all parts of Nigeria and nursing/midwifery education is regulated and accredited by a single body irrespective of ownership (national/state owned; private/public) of the training institution. However, although the average knowledge is high, participants lack proper understanding of the types of FGM/C and in particular types 2, 3 and 4 with only a third of the participants able to correctly state all types of FGM. This finding is similar studies in the Gambia [17] and Sudan [16]. Years of experience does have significant statistical association with the level of knowledge of participants, with those having less than 10 years' experience constituting the bulk of those who have adequate knowledge including correct knowledge on the types of FGM. Plausible reason include the recent national clamouring for the elimination of FGM particularly in Nigeria

Table 4. Predictors of the practice of FGM among PHWs.

Predictor	p-value	Odds ratio (OR)	95% C.I. for OR	
			Lower	Upper
Age	0.451	1.022	0.967	1.080
Religious affiliation	0.929	--	--	--
Islam	0.784	0.692	0.050	9.601
Christianity	0.712	0.605	0.042	8.702
Tribe	0.093	--	--	--
Fulani	0.020	10.489	1.448	75.983
Igbo	0.405	2.178	0.349	13.594
Yoruba	0.244	0.398	0.085	1.876
Others	0.634	1.455	0.311	6.795
In service training on FGM/C	0.438	--	--	--
Yes	0.266	0.163	0.007	3.997
No	0.389	0.574	0.163	2.026
I approve of FGM				
Yes	0.456	2.182	0.281	16.952
No	0.562	1.745	0.623	9.451
My religious beliefs approve of FGM				
Yes	0.788	1.845	0.602	18.723
No	0.490	2.542	0.180	35.851
FGM is violence against women	0.546	--	--	--
Yes	0.281	4.364	0.299	63.604
No	0.853	1.203	0.170	8.529
Knowledge	0.942	1.001	0.965	1.039
Attitude	0.023	1.053	1.007	1.101
Constant	0.082	0.017	--	--

Table 5. Predictive model fitting on FGM among participants.

Model	Model fitting information				R-square		
	2 Log likelihood	Chi-square	Df	Sig.	Cox and snell	Nagelkerke	Hosmer and Lemeshow test
Constant	1.403	17.251	--	--	--	--	--
Final model	133.756	17.251	9	0.045	0.11	0.17	0.995

Table 6. Factors that determines the practice of FGM among PHWs variables in the equation.

Step 1 ^a	B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Religion	--	--	0.563	2	0.755	--	--	--
Christianity	-0.320	0.541	0.350	1	0.554	0.726	0.251	2.097
Islam	0.314	1.201	0.068	1	0.794	1.368	0.130	14.394
Tribe	--	--	8.671	5	0.123	--	--	--
Hausa	-18.375	2.317E4	0.000	1	0.999	0.000	0.000	--
Fulani	-19.686	2.317E4	0.000	1	0.999	0.000	0.000	--
Igbo	-20.953	2.317E4	0.000	1	0.999	0.000	0.000	--
Yoruba	-20.125	2.317E4	0.000	1	0.999	0.000	0.000	--
Others	-20.068	2.317E4	0.000	1	0.999	0.000	0.000	--
Family attitude to FGM	--	--	0.499	2	0.779	--	--	--
Support the practice of FGM	22.776	4.019E4	0.000	1	1.000	7.787E9	0.000	--
Does not support the practice of FGM	23.254	4.019E4	0.000	1	1.000	1.256E10	0.000	--
Constant	-1.830	4.639E4	0.000	1	1.000	0.160	--	--

^aVariable(s) entered on step 1: religion, tribe, Family attitude to FGM
 B=Beta level of statistical significance, S.E=Standard Error, Df=Degree of freedom

when some states passed bills that prohibit the practice of FGM which might have increase community sensitization and awareness [20].

Respondents' commonest source of information on FGM was during formal class room sessions (45%) and in service training programs (27%). However, it is most encouraging to note that 28% of the respondents are active learners who not only browse the internet but also search for information from scientific journals. This is not unexpected, since the internet is readily available in urban areas and they are working in tertiary health facility with infrastructure such the library and wireless internet services. However, it is surprising that two thirds of the respondents could not correctly state the types of FGM despite more than half of them have either had in service training or self-reported access to journals on the internet. In this study, none of the respondents gave Mass media as his/her source of information which is in variance to study in Southern Nigeria by Onu et al., (2006) where more than a tenth indicated mass media as the major source of information [20]. While mass media has a wider reach, but it is doubtful, if highly technical information such as the types of FGM be adequately stated to the level knowledge expected of health care professionals. In general, information from mass media tends to target the larger audience who are not health care professionals and therefore, may not contain scientific details.

It is therefore, imperative that such inappropriate source of information be discouraged among PHWs by provision of evidence based information that will build the knowledge and skills expected of health care professionals in order to provide a holistic qualitative services.

In our study, only 7% of the respondents reported to have aided or performed FGM, and did so more than 24 months ago. The low prevalence recorded in our study is similar to a study conducted in 4 referral hospitals in Bayelsa state, southern Nigeria [25]. Previous research in Nigeria have not indicated whether the self-reported practice of FGM was a reflection of the current and past behaviour of the respondents in terms of date of the most recent case of FGM that he/she was involved [5,10,20,25]. However, it is far lower by 7–9 folds when compared with a Kenyan national average of 33% and up to 50% in some areas of Kenya as the proportion of FGM/C that were performed by PHWs [19]. Furthermore, in the Gambia, 71% of cases of FGM among children between the ages of 4-7 years were reported to have been performed by professional health care worker [18]. This might not be unrelated to the fact that, as oppose to Nigeria, medicalization of FGM/C seem to have risen in Kenya between 1993 and 2000 from 5% to 23% respectively due to policy provision that allows nurses and midwives perform some surgical procedures [19].

While studies in Kenya [18,19] indicated, the major reasons

for medicalization of FGM as safety and financial gains, none of the participants in the present study had indicated financial gains as their reason for medicalization of FGM. All the seven respondents' who had self-reported to have practiced FGM provided reasons based on sociocultural norms of the expected sexual behaviour of women rather than safety or financial motivations. However, it is important to note that the 7% reported proportion of health care professionals who had practice FGM is far lower when considered against the backdrop that 14% of them are in favour of the continued practice of FGM in our community. A much higher figure of 42.5% of nurses and midwives were reported to hold an attitude that FGM should be continued in the Gambia because medicalization of FGM is much safer than having it done by elderly women, traditional local barbers or traditional birth attendants [17]. Among those who believe it's a religious injunction, three quarters were adherents of the Islamic faith suggesting a twofold likelihood that Muslim nurses and midwives to be more favourably disposed to the continued practice of FGM compared to their Christian colleagues. However, studies in Kenya [13] and Sierra Leone [12,13] indicated that both adherents' of Islam and Christianity have exhibit fairly similar magnitude after controlling for tribe and socioeconomic status and that protestants are less likely to practice FGM compared to Catholics. The role of tribe was similarly found in our study, with respondents tribal affiliation and attitude towards the practice of FGM as the only variable that is significantly statistically predictive of the medicalization of FGM by health care professionals with tribe having an odd ratio of 10 folds compared to religion, age, years of experience and service training attended (Tables 3, 4 and 6). This reinforces the position by the various United Nations report that evidence regarding the influencers of the practice of FGM to be a web of social and ethnic factors that operates at the level of an individual, family, and community and generally among individuals with low level of autonomy on ability to take independent decisions on matters relating to their health [2,3,8,9].

Conclusions

The study demonstrated the continued support to the practice of FGM/C among PHW and the low level of knowledge on the types FGM. One way to facilitate the acceleration to the elimination of FGM/C will be through reinforcing the topic during school years in order to improve their knowledge and competences. This way it will put additional pressure to its elimination in our communities and also ensure the provision of better quality of services to any new or old cases of FGM/C and its related complications.

List of abbreviations

FGM/C: Female genital mutilation/cutting
PHW: Professional health workers
TRA: Theory of reason action

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Authors' contributions	ASU	OMO
Research concept and design	--	✓
Collection and/or assembly of data	--	✓
Data analysis and interpretation	✓	--
Writing the article	✓	--
Critical revision of the article	--	✓
Final approval of article	✓	✓
Statistical analysis	✓	--

Acknowledgement

Our sincere gratitude goes to all the nurses and midwives who participated in the study and the Resident Doctors of the Department of community Health, Usmanu Danfodiyo University Teaching Hospital Sokoto, who assisted in the collection of data.

Publication history

Editor: Giampiero Capobianco, University of Sassari, Italy.
EIC: Zeev Blumenfeld, Technion-Israel Institute of Technology, Israel.
Received: 27-Aug-2014 Final Received: 10-Oct-2014
Accepted: 18-Oct-2014 Published: 24-Oct-2014

References

1. WHO, UNICEF, UNFPA. **Female genital mutilation: A joint WHO/UNICEF/UNFPA statement**. Geneva: World Health Organization. 1997. | Pdf
2. **Eliminating female genital mutilation**. An inter-agency state comprising of OHCHR, UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCR, UNICEF, UNIFEM & WHO. Geneva: World Health Organization. 2008. | Pdf
3. UNFPA, UNICEF. **Joint program female genital mutilation/cutting: Accelerating change 2012 annual report on scaling up a comprehensive approach to abandonment in 15 African countries**. | Pdf
4. **Female genital mutilation: Global statistics**. New York, USA: UNICEF. 2013. | Website
5. Okeke T, Anyaehie U and Ezenyeaku C. **An overview of female genital mutilation in Nigeria**. *Ann Med Health Sci Res*. 2012; 2:70-3. | Article | PubMed Abstract | PubMed Full Text
6. **Children's and Women's Rights in Nigeria: A wake-up call**. Situation Assessment and Analysis. Lagos, Nigeria:UNICEF. 2001. | Pdf
7. Banks E, Meirik O, Farley T, Akande O, Bathija H and Ali M. **Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries**. *Lancet*. 2006; 367:1835-41. | Article | PubMed
8. **Female genital mutilation**. *Fact sheet* N°241, Geneva: World Health Organization. 2014. | Website
9. **Day of Zero Tolerance for Female Genital Mutilation**. Being a message of the United Nations Secretary-General, Mr Banki Moon. Resolution Declaring Day of Zero Tolerance for Female Genital Mutilation. New York USA: United Nations. 2014. | Website
10. Nalah AB. **Female genital mutilation in Nassarawa Eggon community, Nassarawa state, Nigeria**. *Research on Humanities and Social sciences*. 2013; 3:7-14. | Article
11. Jones SD, Ehiri J and Anyanwu E. **Female genital mutilation in developing countries: an agenda for public health response**. *Eur J Obstet Gynecol Reprod Biol*. 2004; 116:144-51. | Article | PubMed
12. Program for Appropriate Technology in Health. **The facts: Female genital mutilation**. *PATH_The Facts*. 1997; P1-8. | Article
13. Njue C and Askew I. **Medicalization of female genital cutting among the Abagusii in Nyanza Province, Kenya**. *Frontiers in reproductive health program Population Council*. 2004; 1-24. | Pdf

14. Von der Osten-Sacken T and Uwer T. **Is Female Genital Mutilation an Islamic Problem?** *Middle East Quarterly*. 2007; **14**:29-36. | [Article](#)
15. Zaidi N, Khalil A, Roberts C and Browne M. **Knowledge of female genital mutilation among healthcare professionals.** *J Obstet Gynaecol*. 2007; **27**:161-4. | [Article](#) | [PubMed](#)
16. Ali AA. **Knowledge and attitudes of female genital mutilation among midwives in Eastern Sudan.** *Reprod Health*. 2012; **9**:23. | [Article](#) | [PubMed Abstract](#) | [PubMed Full Text](#)
17. Kaplan A, Forbes M, Bonhoure I, Utzet M, Martin M, Manneh M and Ceasay H. **Female genital mutilation/cutting in The Gambia: long-term health consequences and complications during delivery and for the newborn.** *Int J Womens Health*. 2013; **5**:323-31. | [Article](#) | [PubMed Abstract](#) | [PubMed Full Text](#)
18. Chege JN, Askew I and Liku J. **An assessment of an alternative rites approach for encouraging abandonment of female genital mutilation in Kenya.** *FRONTIERS in reproductive health*. Washington DC: Population Council. 2001. | [Pdf](#)
19. **Eliminating the practice of female genital mutilation: Awareness raising and community change in four districts of Kenya.** The final evaluation of the MYWO/PATH Female Genital Mutilation 2001. Nairobi, Kenya: Programme for Appropriate Technology in Health (PATH). 2001.
20. Onuh SO, Igberase GO, Umeora JO, Okogbenin SA, Otoide VO and Gharoro EP. **Female genital mutilation: knowledge, attitude and practice among nurses.** *J Natl Med Assoc*. 2006; **98**:409-14. | [PubMed Abstract](#) | [PubMed Full Text](#)
21. Redding CA, Rossi JS, Rossi SR, Velicer, WF and Prochaska JO. **Health behavior models.** *The Int Elect J Health Edu*. 2000; **3**:180-193. | [Pdf](#)
22. **Dynamics of decision-making and change in the practice of female genital mutilation in the Gambia and Senegal: A social science policy brief by UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction.** WHO/RHR/HRP/10.16-Web only Geneva: World Health Organization. 2010. | [Website](#)
23. Umar AS, Oche MO and Adeoso A. **Discriminatory practices of health workers towards people living with HIV/AIDS in Sokoto, Nigeria.** *Journal of AIDS and HIV Research*. 2012; **4**:223-228. | [Pdf](#)
24. **Female genital mutilation: Policy guidelines for nurses and midwives on the prevention and management of health complications.** World Health Organization. 2001. | [Pdf](#)
25. Ibrahim AI, Oyeyemi AS and Ekine AA. **Knowledge, attitude and practice of female genital mutilation among Doctors and Nurses in Bayelsa state, Niger Delta of Nigeria.** *Int J Med BioMed Res*. 2013; **2**:40-47. | [Pdf](#)

Citation:

Umar AS and Oche OM. **Medicalization of female genital mutilation among professional health care workers in a referral hospital, north-western Nigeria.** *J Reprod Biol Health*. 2014; **2**:2.
<http://dx.doi.org/10.7243/2054-0841-2-2>