



IJMA

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INTERNATIONAL JOURNAL of  
MATERNAL and CHILD HEALTH and AIDS  
ISSN: 2161-864X (Online)  
ISSN: 2161-8674 (Print)  
DOI: 10.21106/ijma.548

**ORIGINAL ARTICLE | REPRODUCTIVE HEALTH****Variations in the Prevalence of Female Genital Mutilation Among Reproductive-aged Women in Nigeria Across Three Generations**

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**ABSTRACT**

**Background and Objective:** Female genital mutilation (FGM) is widespread mainly in low and middle-income countries. Nigeria is one of the countries with the highest prevalence of FGM, accounting for about one of every four cases globally. The purpose of this study was to determine the prevalence of FGM among three generations in Abuja, the federal capital city of Nigeria.

**Methods:** This is a cross-sectional study among women of reproductive age (15-49 years) within two area councils of Abuja (Bwari and Abuja Municipal) and Nyanya suburban district adjoining the federal capital territory in Nigeria. The respondents are pregnant women attending antenatal care at four selected health facilities. Data were collected using Google Forms and were analyzed with SPSS for Windows version 25.

**Results:** This study comprised data from 634 females (who had an average age of 33±6.0 years) from four major healthcare facilities in Abuja. The most common age group was 30 – 34 years (29.2%). The prevalence of FGM in the first generation (37.7%) was significantly higher than in the second (28.5%) and the third generations (8.7%) ( $p < 0.01$ ). The prevalence of FGM in the second generation was also significantly higher than in the third ( $p < 0.01$ ). The predictors of women circumcising their daughters include primary/no-education AOR 1.48 (95% CI: 0.41-5.31;  $p < 0.05$ ), being a traditionalist 4.94 (95% CI: 0.29-84.56;  $p < 0.05$ ), or Muslim 2.27 (95% CI: 0.94-5.49;  $p < 0.05$ ), respondent's mother being circumcised 1.69 (95% CI: 0.26-10.85,  $p < 0.05$ ) or mother's circumcision unknown 5.41 (95% CI: 0.78-37.34;  $p < 0.05$ ), respondents being circumcised 54.71 (95% CI: 0.78-37.34;  $p < 0.001$ ), culture 2.48 (95% CI: 1.00-6.19;  $p < 0.05$ ), and ignorance of adverse psycho-social/emotional effects of FGM 4.39 (95% CI: 1.46-13.17;  $p < 0.05$ ).

**Conclusion and Global Health Implications:** Although there is a decline in FGM prevalence from the first generation to the third generation in Nigeria, the current prevalence of 8.7% remains a public health concern. Nigerian women's ongoing experience of FGM requires both individual and stakeholders' involvement to eradicate health-related problems such as tissue damage, infection, scarring, infertility, and pains during sexual intercourse, urination, and menstruation.

**Keywords:** • Female Genital Mutilation (FGM) • Circumcision • Genital Cut • FGM Prevalence

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## I. Introduction

### 1.1. Background of the Study

Globally, female genital mutilation (FGM) primarily takes the form of traditional procedures performed on girls and women. Firmly woven into cultural beliefs and perceptions, FGM has been in place for many years, particularly in developing countries, and has been passed down across many generations, making it challenging to change what has been practiced over decades.<sup>1</sup> The dominance of its practice is mainly in many low and middle-income countries (LMICs) of Africa, Asia, and the Middle East.<sup>2</sup> In Ethiopia, FGM is commonly performed, and it is a significant contributor to the country's high maternal death rate. This practice is regarded as a major national public health issue since it impacts the physical and mental health of more than half of Ethiopia's population, which in turn also impacts the country's socio-economic development.<sup>3</sup> Also, in Nigeria, subjecting girls and women to obscure traditional practices has been described as legendary.<sup>4</sup> The World Health Organization (WHO) further described FGM as an "intentional alteration or infliction of injury to the female genital organs for non-medical reasons despite the evidence that it is of no benefit to females and can result in severe bleeding and problems with urination, cysts formation, infections, and other complications in childbirth and increased risk of infant deaths."<sup>5</sup> The WHO strongly condemns FGM practice by health professionals in the process dubbed as medicalization because it violates the human rights of girls and women.<sup>1</sup> The practice reflects deep-rooted inequality between the sexes and constitutes extreme discrimination against women.<sup>5</sup> According to WHO, FGM is mainly performed on minors, and in most cases, the cutting occurs before the child is 14 years old.<sup>6</sup>

The global prevalence of FGM is declining, however, the body of published literature to support this decline is inadequate.<sup>6</sup> Nigeria is one of the countries with the highest prevalence of FGM with about 115–130 million circumcised women currently living with the health consequences of FGM which accounts for about one of every four cases of the

global burden.<sup>1</sup> A study in Nigeria showed that although FGM awareness was high (93.6%) among mothers, the majority (67.2%) who have had FGM still practiced it and who have at least one daughter who has undergone FGM.<sup>7</sup> Similarly, only 10.4% of these mothers believed that FGM was harmful.<sup>7</sup>

Several factors are associated with FGM practices, including education, religion, culture, and mother's experience of FGM.<sup>2,8</sup> The most important factor related to a daughter's circumcision is her mother's experience and level of education. Ogbu's study confirmed that FGM is deeply rooted in religion, culture, and tradition in Nigeria and suggested that for this practice to be reduced, the government should enforce laws that will deter the perpetrators of this practice.<sup>9</sup> While some studies found a significant association between FGM and religion, particularly the Islamic faith,<sup>6,8</sup> other studies did not.<sup>10,11</sup> Long-standing cultural beliefs and practices were cited as the main reasons for performing FGM in some parts of Nigeria,<sup>7</sup> particularly among the Yorubas and the Igbos, which is higher compared to their Hausa counterparts.<sup>9</sup>

### 1.2. Objectives of the Study

The study objective was to determine the prevalence of FGM among three generations of Nigerian women of reproductive age.

### 1.3. Specific Aims and Hypothesis

Specifically, we sought to determine the association between cultural/ethnic requirements, the prevalence of FGM practices in Nigeria, mother's education, history of FGM, religion, awareness of health problems, the adverse psychological effects of intergeneration variation, and the factors associated with mothers choosing for their daughters to be circumcised.

## 2. Methods

### 2.1. Study Design

This was a cross-sectional study among women of reproductive age between 15–49 years within the Federal Capital Territory (FCT), Abuja, in four participating public hospitals considered to have a high volume of women attending the antenatal clinics

(ANC). These hospitals were located in Kubwa, Nyanya, Asokoro and Maitama. These locations were chosen because they are densely populated with people from diverse ethnic backgrounds. The study used questionnaires designed to obtain primary data from the respondents. The respondents were also interviewed. The data collectors documented the online responses using Google Forms.

## 2.2. Setting

Respondents in the study were pregnant women attending ANC at the participating health facilities. The study was conducted between May 28 and July 11, 2019. The study was carried out in Abuja, which comprises six Area Councils-Municipal: Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje, and Kwali. The city of Abuja is considered cosmopolitan, people from all the six geopolitical zones of Nigeria and other parts of the world reside in Abuja. As of 2016, its growth rate was estimated to be 6.11%, with an estimated population of 3,564,126; males 51%, and females 49%.<sup>12</sup> The population of women of reproductive age in Abuja was estimated to be 855,747 (using the 2016 population estimate). The inhabitants identified primarily as Christians, Muslims, and other traditional worshippers.<sup>12</sup> All participants of the study were women of reproductive age who had at least one daughter. Eligible respondents were consecutively enrolled until the required sample size from each facility was attained.

## 2.3. Study Variables

The dependent variables included the respondent mother's FGM experience, respondents' FGM experience, and daughter's FGM status, while the major independent variables included the respondent's education, religion, cultural requirement, and tribe.

## 2.4. Statistical Analysis

Aggregate data from the Google Form database was exported to Statistical Package for the Social Science (SPSS) version 25 for the analysis.<sup>13</sup> Descriptive and inferential statistics were performed. The results are presented in Tables 1-3. Univariate and multivariate analyses were

performed to determine the factors associated with women choosing for their daughters to be circumcised. A p-value of  $p < 0.05$  were considered significant. Ethical approval was obtained from the FCT Health Research Ethics Committee (approval number FHREC/2019/01/55/16-05-19 with one calendar year validity period).

## 2.5. Sample Size

The total sample size for the study was determined using Raosoft® online software.<sup>14</sup> With an error margin set at 5%, confidence interval at 95%, and an estimated response rate of 50%, the minimum calculated sample size for the study is 384.

## 3. Results

### 3.1. Sociodemographic Characteristics

This study comprised 634 females from four major healthcare facilities, namely: Asokoro (124, 19.6%), Kubwa (141, 22.2%), Maitama (88, 13.9%), and Nyanya (281, 44.3%) general hospitals in Abuja, the federal capital city of Nigeria. The average age of the respondents was  $33 \pm 60$  years with a minimum and maximum of 20 and 49 years, respectively. The most common ethnic group was Igbo 194 (30.6%), followed by Hausa, 172 (27.1%), and Yoruba, 147 (23.2%). Other tribes constituted 19.1% of all the respondents; they include tribes that cannot be directly classified within the three major ethnic groups. Slightly more than half of the respondents were self-employed (50.3%), 33.1% were civil servants, and 16.6% were unemployed. More than 3 out of every 5 respondents had post-secondary education (62.6%). The majority of respondents were Christians, 489 (77.1%), and married (96.8%).

The association between Yoruba ethnicity status with circumcision status for the first and second generations was 49.7% and 32.7%, respectively. The association between Igbos ethnicity status and circumcision status was 41.2% and 31.4% for the first and second generations respectively. The association between Hausa ethnicity status and circumcision status was 20.3% and 16.9% for the first and second generations respectively. The association between other ethnic status and circumcision status was

**Table 1: Sociodemographic characteristics of the respondents**

	Respondents		Mother circumcised		Respondent circumcised		Daughter circumcised	
	n (%)	n (%)	p-value	n (%)	p-value	n (%)	p-value	
Overall circumcision	634 (100.0)	239 (37.7)	-	181 (28.5)	-	55 (8.7)	<0.001*	
<b>Ethnicity</b>								
Igbo	194 (30.6)	80 (41.2)	<0.001*	61 (31.4)	0.001*	14 (7.2)	0.627	
Hausa	172 (27.1)	35 (20.3)		29 (16.9)		16 (9.3)		
Yoruba	147 (19.1)	73 (49.7)		48 (32.7)		16 (10.9)		
Others	121 (23.2)	51 (42.1)		43 (35.5)		9 (7.4)		
<b>Education</b>								
No formal education	9 (1.4)	5 (55.6)	0.067	4 (44.4)	0.295	1 (11.1)	0.003*	
Primary	29 (4.6)	17 (58.6)		12 (41.2)		8 (27.6)		
Secondary	199 (31.4)	78 (39.2)		56 (28.1)		16 (8.0)		
Post-secondary	397 (62.6)	139 (35.0)		109 (27.5)		30 (7.6)		
<b>Religion</b>								
Christianity	489 (77.1)	183 (37.4)	0.836	133 (27.2)	0.153	31 (6.3)	<0.001*	
Islam	140 (22.1)	53 (37.9)		45 (32.1)		22 (15.7)		
Traditional	5 (0.8)	3 (60.0)		3 (60.0)		2 (40.0)		
<b>Marital status</b>								
Currently married	614 (96.8)	228 (37.1)	0.121	175 (28.5)	0.884	53 (8.6)	0.831	
Not currently married	20 (3.2)	11 (55.0)		6 (30.0)		2 (10.0)		
<b>Age</b>								
< 35 years	456	173 (37.9)	0.183	121 (26.5)	0.072	40 (8.8)	0.890	
≥ 35 years	178	66 (37.1)		60 (33.7)		15 (8.4)		

**Table 2: Relationship between circumcision across three generations**

Generations	Response	Have you been circumcised?			X <sup>2</sup> (p-value)
		Yes	No	Total	
Was your mother circumcised?	Yes	155 (64.9)	84 (35.1)	239 (37.7)	263.515 <0.001*
	No	7 (2.2)	312 (97.8)	319 (50.3)	
	I don't know	19 (25.0)	57 (75.0)	76 (12.0)	
	Total	181 (28.5)	453 (71.5)	634 (100.0)	
Was your mother circumcised?	Did you circumcise any of your daughters?				54.193 <0.001*
	Yes	43 (18.0)	196 (82.0)	239 (37.7)	
	No	2 (0.2)	317 (99.4)	319 (50.3)	
	I don't know	10 (13.2)	66 (86.8)	76 (12.0)	
Total	55 (8.7)	579 (91.3)	634 (100.0)		
Have you been circumcised?	Did you circumcise any of your daughters?				135.776 <0.001*
	Yes	53 (29.2)	128 (70.7)	181 (100.0)	
	No	2 (0.4)	451 (99.6)	453 (100.0)	
	Total	55 (8.7)	579 (91.3)	634 (100.0)	

**Table 3: Univariate and multivariate analysis of factors associated with women mutilating their daughters**

Variables	Circumcised daughter			
	UNIVARIATE (Crude)		MULTIVARIATE (Adjusted)	
	OR (95% CI)	p-value	AOR (95% CI)	p-value
<b>Circumcision status</b>				
Education (secondary/higher)	Ref		Ref	
Primary/non-educated	3.71 (1.66-8.31)	0.001*	1.48 (0.41-5.31)	0.049*
Religion (Christianity)	Ref		Ref	
Islam	2.75 (1.54 – 4.93)	0.001*	2.27 (0.94-5.49)	0.016*
Traditional	9.85 (1.59 – 61.14)	0.014*	4.94 (0.29-84.56)	0.027*
Mother circumcised (No)	Ref		Ref	
Yes	34.77 (8.33-145.15)	<0.001*	1.69 (0.26-10.85)	0.045*
Don't know	24.02 (5.14-112.15)	<0.001*	5.41 (0.78-37.34)	0.018*
Have you been circumcised (No)	Ref		Ref	
Yes	93.37 (22.45-388.38)	<0.001*	54.71 (0.78-37.34)	<0.001*
FGM allowed by religion (No)	Ref		Ref	
Yes	11.25 (5.61-22.56)	<0.001*	2.03 (0.79-5.23)	0.014*
FGM required by culture (No)	Ref		Ref	
Yes	5.86 (2.96-11.57)	<0.001*	2.48 (1.00-6.19)	0.045*
Reported any health problem associated with FGM (Yes)	Ref		Ref	
No	2.56 (1.41-4.64)	0.002*	1.61 (0.69-3.72)	0.273*
Reported any adverse psycho-social/emotional effect of FGM (Yes)	Ref		Ref	
No	5.27 (2.22-12.50)	<0.001*	4.39 (1.46-13.17)	0.008*

\*= p <0.05; OR = Odds Ratio; AOR = Adjusted Odds Ratio; CI = Confidence Interval

42.1% and 35.5% for first and second generations, respectively.

The prevalence of FGM practices declined from 37.7% reported for the first generation to 28.5% for the second generation, to 8.7% reported for the third generation. FGM was most common among the Yorubas with 49.7%, 32.7%, and 10.9% prevalence reported across the three generations. FGM prevalence among Igbos across the three generations was 41.2%, 31.4%, and 7.2%, respectively, while prevalence among Hausa was 20.3%, 16.9%, and 9.3% respectively. Among the other tribes (Akwa Ibom, Bayelsa, Edo, Rivers, Idoma, Benue, Urhobo as the major ones), the prevalence of FGM was reported at 42.1%, 35.5%, and 7.4% across the three generations respectively.

The practice of FGM was associated with lower formal education status attainment (55.6% of respondents without formal education and 58.6% of

the respondents who attained only a primary level of formal education reported that their daughter/s were circumcised). Of mothers who reported that their own mothers were circumcised, 44.4% of respondents with no formal education were circumcised, 41.2% of these respondents who had only primary education were circumcised of these mothers, 11.1% of those who had no formal education chose to circumcise their daughters, while 27.6% of the mothers who had only primary education, chose to circumcise their daughters. Among respondents that attained post-secondary education, the proportions of circumcision across the three generations were 35.0%, 27.5%, and 7.6%, respectively. However, the proportion of circumcision in the third generation is statistically significant ( $p = 0.03$ ). The practice of FGM is significantly higher in the third generation among traditionalists than the other religions. FGM practice was not reported as being significantly associated with marital status

or age for any of the three generations ( $p>0.05$ ), Table 1.

### 3.2. FGM Prevalence Among Women of Childbearing Age and Direction of Change in Prevalence Across the Three Generations

As shown in Table 2, a significantly higher proportion of respondents (64.9%) whose mothers were circumcised also had the procedure themselves, in comparison to those whose mothers were not circumcised (2.2%) or who did not know whether their mothers were circumcised (25.0%)  $p<0.001$ . Similarly, a higher proportion of respondents whose mothers were circumcised (18.0%) also chose to circumcise their daughters in comparison to 0.2% of those whose mothers were uncircumcised ( $p<0.001$ ). A significantly higher proportion of circumcised women (29.2%) chose to circumcise their daughters in comparison to the 0.4% of uncircumcised women. Also, among respondents that were not sure whether their mothers were circumcised, only 8.7% circumcised their daughters ( $p<0.001$ ).

As shown in Table 3, circumcising status of daughters in primary/non-educated was 1.48 (95% CI: 0.41-5.31;  $p<0.05$ ) times higher than that of secondary/higher ( $p<0.005$ ) while for religion, the circumcising status in traditional and Islam were 4.94 (95% CI: 0.29-84.56;  $p<0.05$ ) and 2.27 (95% CI: 0.94-5.49;  $p<0.05$ ) times respectively higher than that of Christian. Respondent's mother being circumcised was 1.69 (95% CI 0.26-10.85;  $p<0.05$ ) times or mother's circumcision unknown was 5.41 (95% CI: 0.78-37.34;  $p<0.05$ ) times higher than that of respondent's mother not being circumcised, respondents being circumcised was 54.71 (95% CI: 0.78-37.34;  $p<0.001$ ) times higher than that of not being circumcised, FGM being allowed by respondent's religion was 2.03 (95% CI: 0.79-5.23;  $p<0.05$ ) times higher than that of not being allowed, FGM required by culture was 2.48 (95% CI: 1.00-6.19;  $p<0.05$ ) times higher than that of not required by culture, and not knowing any adverse psycho-social/emotional effect of FGM was 4.39 (95% CI: 1.46-13.17;  $p<0.05$ ) times higher than those who knew.

## 4. Discussion

This study found a significant decline in FGM prevalence between the women interviewed and their mothers and a substantial difference between them and their daughters. Several studies have addressed the prevalence of FGM in many countries, including Nigeria. For example, the National Bureau of Statistics (NBS) reported a significant decline in FGM prevalence across Nigeria between 2013 (24.8%)<sup>15</sup> and 2016 (18.4%).<sup>16</sup> The UNICEF in 2017 said that 8.2% of children aged 0-14 years had undergone FGM in FCT (and 23.3% of mothers across Nigeria reported to have circumcised their daughters in this age bracket).<sup>16</sup> This is similar to the findings from our study in which 8.7% of the respondents reported to have circumcised their daughters. The proportion of mothers that have circumcised their daughters in our study is higher than a recent report that FGM has reduced from 40.1% among older mothers to 3.6% among younger mothers in Nigeria.<sup>17</sup> Another recent study among Igbo women also found a prevalence of 13.4%, compared to 28.5% in our study. These variations might be due to sample size and the study population. In a five-year study conducted in Senegal to understand the trends in FGM/C across regions and generations, Kandala and Shell-Duncan found a decrease in the prevalence of FGM across all generations of women after adjusting for the individual- and community-level factors.<sup>18</sup> Some researchers argued that the practice of FGM continues because of social and family pressure to adhere to tradition, and this is passed on from generation to generation, whose result leaves girls and women to suffer the consequences indefensibly.<sup>19</sup> Other studies have also argued that the practice of FGM is sustained from generation to generation because the procedure is deeply rooted in social norms, cultural beliefs, and tradition or because of its strong association with ethnicity and religion, particularly among the Muslim community.<sup>17,19</sup>

Although the practice of FGM in Nigeria is widespread and varies with geopolitical zone, state, and ethnic group,<sup>13</sup> several studies have reported that the highest prevalence of FGM is in the southern geopolitical zone of Nigeria, among the Yoruba and Igbo ethnic groups.<sup>4,16,20,21</sup> This is consistent with our

study findings. The prevalence of FGM is still higher in the southern parts of Nigeria, even though this part is more urbanized. A higher proportion of the women from this zone have received higher education than their northern counterparts.<sup>16</sup> The NBS reported the prevalence of FGM in Nigeria in 2013, based on ethnicity as Yoruba-54.5%, Igbo 45.2%, and Hausa 19.4%. A similar trend was observed in 2016, although the prevalence was generally lower across all ethnic groups than in the 2013 report. In the 2016 report, the prevalence was 45.4% among Yoruba women, Igbo-29.2%, and Hausa 13.9%.<sup>9,16</sup> This study also found that the prevalence of FGM is significantly higher among the Yorubas, Igbos, and other tribes than among the Hausas in the first and second generations. Still, the lowest prevalence of FGM was seen among the Igbos in the third generation. However, the difference was not statistically significant.

The prevalence of FGM in this study was not significantly different across all religions in the first and second generations ( $p > 0.05$ ) but significantly lower among Christians than Muslims and Traditionalists in the third generation ( $p < 0.05$ ). The rate of FGM practice was considerably lower across all religions in the third generation than in the first and second generations. These findings complement previous reports that FGM is more prevalent among Muslims.<sup>7,17,22,23</sup>

Some previous studies have argued that it is incorrect to assume that FGM is linked to religion, especially the Islamic faith.<sup>8</sup> It was further argued that less than 60% of the mutilated women in Africa are Muslims and less than 40% are Christians, while others are either Jewish or practicing traditional beliefs.<sup>8</sup> The World Health Organization<sup>24</sup> claims that FGM predates Islam, citing that FGM is not practiced across all Muslim countries. Some other researchers argued that FGM is one practice embraced by practitioners of all the major faiths prevalent on the African continent; Christianity, Islam, and traditional worship.<sup>10</sup> The UNICEF<sup>25</sup> reported the prevalence of FGM in Islam as 27%, while Christianity was 1% among girls and women 15 – 49 years old. In contrast, Nehmo et al. argued that although FGM has not been advocated explicitly by religious groups and

does not appear anywhere in the Quran or Bible, the practice is loosely acceptable in Muslim and Christian communities worldwide.<sup>26</sup>

Education was significantly associated with the women's decision to perform the FGM on their daughters. The rate at which respondents circumcised their daughters significantly decreased with an increase in the respondent's level of education. Also, most of those who performed FGM on their daughters confirmed that their religions and culture require FGM. In this study, women who were not educated were two times more likely to mutilate their daughters than the educated ones. Also, women whose mothers were circumcised are more likely to circumcise their daughters.

Previous studies have argued that educated women and girls are less likely to support the practice of FGM, and the majority of women with FGM are rural residents, less educated, and illiterate.<sup>8,21,27,28</sup> It has been argued that educational interventions that emphasize the negative consequences of FGM and correct myths, missing, and wrong knowledge associated with FGM can trigger changes in beliefs and practices of FGM.<sup>29</sup> In some countries, daughters of women with high levels of education are much less likely to undergo FGM than daughters of women without formal education.<sup>11</sup> Where data exist, the difference between "any education" and "none" appears to be stronger than the difference between primary and secondary education, implying that even a small amount of formal education of mothers is associated with factors that protect their daughters from FGM.<sup>11</sup> Pashaei et al. also reported in their study that in Iran, mothers' education was negatively related to their attitudes towards FGM.<sup>30</sup> These findings imply that highly educated mothers had less positive attitudes towards the genital mutilation of their daughters and perceived less social pressure to make their daughters undergo FGM.<sup>6</sup> According to the study of FGM/C by the United Nations Department of Economic and Social Affairs (UNFPA) in Guinea and Burkina Faso in 2014, the mother's level of education was identified as one of the determining factors for mutilation of the daughter's genitals.

According to Sipsma et al., being less educated and being a Muslim is associated with FGM, suggesting that these sub-populations may be the focus on FGM intervention approaches in some countries.<sup>31</sup>

This study also corroborates with Ogbu that the more educated and informed a woman is, the more she understands and appreciates the hazardous effect of harmful practices like FGM and sees it as unnecessary.<sup>9</sup> Furthermore, another study conducted in Iran in 2016, where it was found that mother's attitudes toward FGM are more positive when they have less education.<sup>21</sup> The odds ratio of 3.71 (1.66-8.31) for women with a primary or no formal education in our study is similar to the odds ratio of 3.68 (2.05-6.61) recorded for women with primary education (when compared to women with higher education) in Iran, 2016.<sup>32</sup> Findings from this study also agree with a similar association between FGM and education in Nigeria by Okeke et al.<sup>1,2,19</sup> They argued that the more educated, more informed, and more active socially and economically a woman is, the more she can appreciate and understand the effects of harmful practices like FGM and sees it as unnecessary procedure and refuses to subject her daughter to such procedure.<sup>1</sup> Also, a women's rising level of education may not be connected with the ability to comprehend the often "complex" message against the practice of FGM.

This study found that mothers who had experienced FGM reported cutting their daughters more than those who had not experienced it. This finding agrees with previous studies, which said that mothers who have at least one daughter and have undergone FGM or married before 18 are more likely to cut their daughters.<sup>33</sup> UNICEF report on FGM in the Benin Republic also confirmed that women cut are more likely to circumcise their daughters.<sup>34</sup>

#### 4.1. Strengths and Limitations of the Study

The respondents reported all information obtained for this study (including those of the first and third generations). Direct reports from these other two-generation women and girls could have limited

possibilities of recall errors. This study did not explore whether FGM is allowed by their husband's religion and culture and did not extend to verify whether the mothers-in-law of the respondents were circumcised. Some respondents have not been circumcised as well as their mothers, but their daughters were circumcised. Variables including the husband's and mothers-in-law may provide insight into these occurrences and are recommended as new areas for further research. This might be why some women were not circumcised, but their daughters were cut. However, the strength of this study lies in the study location. The study was conducted in the capital of Nigeria, which comprised women from all ethnic groups and backgrounds.

## 5. Conclusion and Global Health Implications

This study found a significant decline in FGM practice from the first generation to the third generation. It is noted that although FGM is reportedly being practiced, the rate is significantly lower than in the past generation, and this is consistent across all regions, religions, and cultures of Nigeria. This study also noted that FGM among daughters is significantly associated with a mother's level of education, and the people believe their cultures and religions require them to practice FGM. Although this trend changed in the second and third generations, mothers who were circumcised are more likely to have their daughters circumcised. The study findings also suggest that there can be a further decline in the prevalence of FGM with the new generation of mothers being less supportive of the practice.

### Compliance with Ethical Standards

**Conflicts of Interest:** The authors declare no competing interests.

**Financial Disclosure:** Nothing to declare. **Funding/Support:** None.

**Ethical Approval:** Ethical approval was obtained from the Federal Capital Territory (FCT) Health Research Ethics Committee (approval number FHREC/2019/01155/16-05-19). **Acknowledgments:** None.

**Disclaimer:** The views presented here are those of the authors according to the study and are not associated with their affiliations.

### Key Messages

- ▶ The practice of female genital mutilation (FGM) in Nigeria is widespread and varies within and across the nation's ethnic groups, states, and geopolitical zones.
- ▶ Most of the mothers who performed FGM on their daughters stated that their religions and culture allow FGM.
- ▶ Women who reported greater access to education were less likely to choose for their daughters to be circumcised.

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