

# Female Genital Mutilation/Cutting among Ghanaian Women: The Determinants

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## Abstract

This study examines female genital mutilation/cutting (FGM) among Ghanaian women and the determining factors associated with the practice. We used a data set based on a longitudinal study from the fourth round Multiple Indicators Cluster Survey (MICS). This was a national survey conducted by Ghana Statistical Service (GSS) in 2011 to monitor progress of women and children. A sample of 10,963 women within the reproductive age (15 – 49) years across the country between 2009 and 2011 were selected for the survey.

A multiple logistic regression and bootstrap techniques were used to determine the relationship of socio-demographic factors and female circumcision. The estimated women who had undergone female circumcision was about 15.9% out of the 7666 women who responded to the question on female circumcision. This means that about 2 out of 10 women between 15 – 49 years have undergone circumcision. Female circumcision is very predominant among women in the Upper West region, Moslems and the Mole/Dagbanis. The factors observed to be highly significantly associated with female circumcision among Ghanaian women included marital status (p-value = 0.000), woman's age (p-value = 0.000), region of residence (p-value = 0.000), educational level (p-value = 0.001), religion (p-value = 0.002) and ethnicity (p-value = 0.002). The results show that prevalence of FGM among more advantaged women is lower than less advantaged women. The findings further reveal that women from the northern part of Ghana are more prone to FGM than women who live elsewhere.

**Keywords:** Female Genital Mutilation/Cutting, Reproductive age, Prevalence, Endemic

## 1. Introduction

The customs and traditions of most societies can jeopardize the health, well-being and dignity of females. Globally, the practices that are consistently recognized as harmful to women include, among others, female genital mutilation (FGM), child marriage, dowry-related deaths, honour killings, and manifestations of son preference (Radhika, 2002). FGM has received growing attention from governmental and international organizations during the past decade. It is commonly considered a human rights violation and international pressure has been exerted on governments, communities, and individuals to do away with the practice (Shell-Duncan and Hernlund, 2000). Yet the practice has not ceased. Young girls and women who undergo FGM are subjected to extreme pain, since the procedure is often conducted without anaesthesia and under non-sterile conditions. Reasons for the practice of FGM include beliefs that it enhances fertility, promotes purity, increases marriage opportunities and prevents stillbirths. These beliefs are strongly rooted in tradition, culture and religion, but none carries a scientific basis (Nour, 2006; Plan, 2005).

In Ghana FGM has been practiced by several ethnic groups from the northern part of the country; in 2008 study conducted by the Ghana Statistical Service with support from UNICEF, percentage of females under the age of 50 who had experienced some form of FGM in the Upper West, Upper East and the Northern Regions are: 49, 20 and 5 respectively. Victims can also be found among immigrants from neighbouring countries, where FGM is highly prevalent (United States Department of State, 2012). According to Oduro et. al (2006), out of 5071 deliveries in Kassena-Nankana District (Upper East Region), about 29 percent of the women were associated with FGM. The highest prevalence of 61.5 percent were women aged 40 years and above, and the lowest of 14.4 percent were women below 20 years. The all-age prevalence of FGM showed a significant decline (p-value for linear trend < 0.01) from 35.2 percent in 1996 to 21.1 percent in 2003. About 6 percent of mothers with FGM had stillbirths compared with about 3 percent of mothers without FGM. Again FGM was associated with 8.2 percent caesarean section rate compared with 6.7 percent in mothers without FGM. Mean birth weight and frequency of low birth weights were not significantly associated with FGM status.

Research conducted in 2009 survey of females between the ages of 15 and 49 in the Upper West Region, revealed that 85 percent of the women wished the practice to be discontinued, 10 percent were unsure, and only 5 percent supported its continuation. Lower prevalence of FGM among women in the Upper East Region was highly correlated with increased education (United States Department of State, 2012). Netsayi et al (2012) used logistic regression to analyse the relationship of factors that affects female circumcision and realized that religion, ethnicity, residential location and mother's education were associated with being circumcised. Current school attendance was not associated with being circumcised but if one had never attended school then they were more likely to be circumcised.

### *1.1 Associated Risks of FGM*

The short-term complications of FGM include but not limited to, excessive bleeding, infection and severe pain (Innocenti Digest, 2005). In the long run, FGM heightens pregnancy and childbirth related risks of women. The increased risk may be attributable to vulva and vaginal scarring associated with FGM, which can obstruct delivery. In addition, genital and urinary-tract infections caused by FGM can also lead to problems during delivery (WHO, 2006).

It also believed that the immediate and long-term health consequences of FGM vary according to the type and severity of the procedure performed. Immediate complications include severe pain, urine retention, shock, haemorrhage, infection and sometimes lead to death. Additional consequences include cysts, abscesses, keloid scarring, damage to the urethra, dyspareunia and sexual dysfunction. Personal accounts of mutilation reveal feelings of anxiety, terror, humiliation and betrayal, all of which would be likely to have long-term negative psychological effects (Zara, 2002).

In recent times, there have been concerns about the potential risk of transmission of the human immunodeficiency virus due to the practice (WHO, 1996). Victims of FGM suffer feelings of in-completeness, anxiety and depression (Mahran, 1981).

### *1.2 Prevalence Rate in Other Parts of the World*

FGM is practiced in Africa, the Middle East, Indonesia and Malaysia (William and Smith 2012) as well as some migrants in Europe, United States and Australia. It is also seen in some populations of South Asia. The highest known prevalence rates are in 30 African countries, in a band that stretches from Senegal in West Africa and to Ethiopia on the east coast, as well as from Egypt in the north to Tanzania in the south (Doherty, 2012) According to a 2013 UNICEF report on select countries, FGM is known to be prevalent in 27 African countries, Yemen and Iraqi Kurdistan, where 125 million women and girls have undergone FGM (Berivan et al. 2013). FGM affects the lives and well-being of 92 percent of women of childbearing age in Mali (Yoder et al., 2004). Although it is not mandated by any major religion, FGM is deeply embedded in Malian culture; 80 percent of women who were circumcised believed that the practice should continue (Mali 144, 2003).

In recent years the increase in immigration of individuals from countries which practice FGM, has led to the introduction of FGM in European and North American societies. However, FGM prevalence rate has been difficult to quantify among immigrants to European countries (Leye, et. al. 2006). A case study which investigated FGM in groups of migrant women from Northern Africa to European countries like Scandinavia, noted that a majority of these women had been circumcised before their migration to Europe (Elgaali et. al., 2005). It has also been established that African communities in European countries continue the practice of FGM on their daughters after migrating to Europe.

### *1.3 FGM Eradication Programme*

A variety of strategies have been implemented to discourage the practice. In 1994, Ghana enacted into law to criminalize the practice. Since then, successful prosecutions of persons performing FGM have been reported from the Upper West and Upper East Regions. In 2007, Parliament further strengthened the law against FGM by increasing the maximum penalty to 10 years of imprisonment (United Nations Human Rights Council, 2008). In November 2003 a court in Upper West region in Ghana jailed a 45 year old woman farmer for 5 years for circumcising 3 girls including a three week old baby (Irin, 2004).

The Malian government has not criminalized the practice of FGM, but it has taken steps to change popular attitudes toward the practice. In 2002, the president of Mali issued an order creating a government program aimed at stopping the practice of FGM (Mali, 2002). In Togo, the prevalence of FGM is estimated at 50 percent of girls and women. The practice was criminalized in 1998. Included in the legislation that outlawed the practice were provisions requiring all health-care facilities to report cases of FGM to law enforcement authorities (Togo, 1998).

In 1994 there were several anecdotal reports of FGM practice amongst migrant communities in Australia. By 1997, all Australian states and territories had made FGM a criminal offence. It is also a criminal offence to take or propose to take a child outside Australia to have FGM performed on her (RCOG, 1997). The incidence of FGM in Australia is not clearly known due to the fact that cases are unreported to authorities and are uncovered only when women and girls are taken to hospital due to complications with the procedure (Sunday Telegraph, 2006).

This study therefore seeks to examine the determinants for FGM among girls and women in Ghana. How the practice is affected by such factors as: wealth index quintiles, region, area of residence, ethnicity, religion and mothers' characteristics including; education, marital status, and age among others. This is influenced by the question asked: whether a woman has ever been circumcised or not

## 2. Data

The 2011 Multiple Indicator Cluster Survey (MICS) data was used in this study. This is a fourth round of the survey which is conducted every five years to monitor the situation of children and women in Ghana. In this survey about 10,963 women who were within the reproductive age (15 – 49 years) were selected across the ten Regions of Ghana. The subjects were interviewed reference to two years preceding the survey. The selection procedure was based on a representative probability sample of households nationwide from a frame of Ghana 2010 Population and Housing Census Enumeration Areas (EA's). For comparability, the MICS used an internationally standardized sampling of two-stage stratified sample design. At the first stage, a number of EA's were selected from the regions which were considered as clusters. The households in each region were then selected using systematic sampling with probability proportional to size in the second stage. Of the 12,150 households selected for the sample, 11, 925 households were contacted and duly interviewed. In the households interviewed, 10,963 women aged 15 – 49 years were identified for interview.

## 3. Methodology

This paper uses a data set based on the 2011 MICS. The survey was carried out on a sample of 11,925 households from a selected household of 11,970 in all the ten administrative regions of Ghana giving about 100% response rate. The households were selected due to the sizes of the regions. The survey used both qualitative and quantitative methods of data collection aimed at providing basic data for measuring the progress of children and women in the country. Data used for analysis in this paper was based on information on all female circumcisions that had occurred two years prior to the survey period. Statistical package for social scientists (SPSS version 20) and SAS system version 9.1 were used for extraction and the eventual analysis of data. Descriptive statistics and frequencies of the background characteristics of the women interviewed were generated. The association between the independent and dependent variable was established using chi-square analysis procedures. The dependent variable selected was the outcome of a question asked: whether a woman has ever been circumcised. The independent variables include Wealth index quintiles, region, area of residence, ethnicity, religion and mothers' characteristics including; education, marital status, and age. A critical level of significance of 5 percent ( $p < 0.05$ ) was used to identify the most statistically significant determinants of circumcision/cutting among the women.

The binary logistic regression model was used to study whether the independent factors affected a female circumcision or not. The bootstrap model which is quite general and also can provide more accurate inferences when the data are not well behaved or when the sample size is small was further used.

### 3.1 model specification

The following generalized linear logistic model was used

$$\pi = \log\left(\frac{P}{1-P}\right) = X\beta + \varepsilon \quad (1)$$

where  $\pi$  links the linear function to  $\log\left(\frac{P}{1-P}\right)$ . The link is not a linear function,  $P$  is the probability of FGM,

$X$  is the model matrix including woman's age, educational level, religion, location of mother and ethnicity. The matrix also includes geographical location, such as region of origin and whether the respondent is from rural or urban environment;  $\beta$  is the vector of parameters, and  $\varepsilon$  is the vector of residuals. The Fisher scoring method was applied (SAS, 2007) to obtain Maximum Likelihood estimates of  $\beta$ . The overall goodness of fit is derived from the Likelihood Ratio Test of the hypothesis  $H_0: c(\beta) = 0$  where a comparison is made between the full model and the model that contains only the intercept (Hilbe and Greene, 2008). Therefore it is a test for global null hypothesis of the elements of the solution vector.

The odds of an event is the ratio of the probability that it would happen to the probability that it would not occur and the likely number of times. In this paper it is the probability that a woman is circumcised to the probability that she is not. This means that the outcome variables in the logistic regression should be discrete and dichotomous. Logistic regression was found fit to be used because the outcome variable was in binary form that is, a woman is circumcised, or otherwise. In addition, there were no assumptions to be made about the distributions of the explanatory variables as they did not have to be linear or equal in variance within the group. The model suggests that the likelihood of a woman within 15 – 49 years being circumcised or otherwise varies across all the independent variables to be studied. After fitting the model, the outcomes were used to interpret the existing relationships between a woman's circumcision, household location and their characteristics.

### 3.2 Goodness of fit test

For basic inference about coefficients in the model the standard trinity of Likelihood-based tests, Likelihood

ratio, Wald and Lagrange Multiplier (LM), are easily computed. For testing a hypothesis, linear or nonlinear, of the form;

$$H_0: c(\beta)=0 \quad (2)$$

the likelihood-ratio statistic is the obvious choice. This requires estimation of  $\beta$  subject to the restrictions of the null hypothesis, for example subject to the exclusions of a null hypothesis that states that certain variables should have zero coefficients. That is, they should not appear in the model. Then the likelihood-ratio statistic;

$$X^2 [J] = 2(\log L - \log L_0) \quad (3)$$

where  $\log L$  is the log-likelihood computed using the full or *unrestricted* estimator,  $\log L_0$  is the counterpart based on the restricted estimator and the degrees of freedom  $J$ , the number of restrictions. Each predictor, including the constant, can have a calculated Wald Statistic defined as:

$$[\beta_j / SE(\beta_j)]^2, \quad (4)$$

which is distributed as  $X^2$ .  $[\beta_j / SE(\beta_j)]^2$  defines both the z or t statistic, respectively distributed as t or normal. For computation of Wald Statistics, one needs the asymptotic covariance matrix of the coefficients.

#### 4. Results

Table 1 shows the descriptive statistics about the characteristics of the women interviewed. Out of the 7,666 women who responded to the question on circumcision, about 1,221 indicated that they have undergone circumcision before, giving a prevalence rate of about 15.9%. This means that about 2 out of 10 women between 15 – 49 years have undergone circumcision. More women (83.8%) in rural areas than in urban areas (16.2%) have undergone circumcision. Women from the Upper West Region of Ghana are more likely to undergo circumcision (54.5%) and those from Volta Region, the least likely to be circumcised (0.3%). Women from Upper East and the Northern Regions also have high rates of about 34.6% and 3.7% respectively. This means that women from the northern sector of Ghana have higher proportion of female circumcision. Women from rural households, those from the poorest households and those who have a maximum of Middle/Junior High School (JHS) education are more likely than more advantaged women to undergo circumcision. For example, the proportion of circumcision among women who have a maximum of middle/JHS education is 87.3%, compared to 12.7% of women who have a minimum of secondary school education. Women from the wealthiest households are less likely to undergo circumcision than women from the poorest households (about 3.1% versus 70.4%). The possibility of a woman undergoing circumcision is higher among Moslems than any other religion. Again, female circumcision appears to be high among older women than the young ones. We speculate that modern parents are trying to ignore this practice than it used to be. Circumcision among currently married women is quite alarming. More women (79.6%) in this category have undergone circumcision than those living with men and those who are not married. Female circumcision appears to have an ethnic connotation. The results show that it is more endemic among the Mole/Dagbanis' (71.5%) and the Grusis' (16.0%) than any other ethnic group. In fact the practise is almost negligible among the Gas'. Tables 2 and 3 depict the results of multivariate logistic regression analysis of household and women's characteristics associated with female circumcision among women within the reproductive age. The factors observed to be highly significantly associated with female circumcision included marital status (p-value = 0.000), mothers' age (p-value = 0.000), region (p-value = 0.000), educational level (p-value = 0.001), religion (p-value = 0.002) and ethnicity (p-value = 0.002).

Confounder control by multiple logistic regression analysis revealed that significant factors (in ascending order of odds ratio) were region, age, marital status, educational level, ethnicity and religion.

#### 5. Discussion

The descriptive statistics show that women in rural areas tend to undergo circumcision than women in urban areas. Circumcision among women who have higher education is lower than women who are not educated or have low levels of education. Here, we speculate that those educated women may have parents who have knowledge about effects and implications of female genital mutilation/cutting. Women whose economic status is high are also few among the circumcised women probably because they are more empowered than those who live below the poverty line. Women who are currently married are in the majority among the circumcised women than those who are not married. We again speculate that this may have a cultural connotation especially in the northern part of the country where among some ethnic groups it serves as a triumph card for marriage. This is clearly the case among the Mole/Dagbanis' which has a large chunk of women circumcised (71.5%). Female circumcision among women in the three northern regions of Ghana is quite alarming. The figure for

these regions alone is about 92.8%. The region which has a staggering figure is Upper West (54.5%) followed by Upper East with (34.6%). These results show that FGM is endemic among women in the northern Ghana. FGM among Moslem women is higher than women of any other religious belief. FGM appears to be high among older women than the young ones. This could be that modern parents who are so enlightened are trying to do away with FGM which is purported to have a cultural undertone as the world becomes a global village. The association of age, location, marital status, educational level, ethnicity and religion observed in this study has also been reported from other parts of the world (examples; Oduro et. al 2006, Netsayi et. al 2012). The revelation that more than half of the women in the Upper West region have undergone FGM should be a source of worry to the nation as it indicates a strong policy issue especially with a prevalence rate of about 16%. This figure means that Ghana is classified among the countries whose FGM situation is considered as low prevalence according to UNICEF FGM classification (UNICEF FGM Report, July 2013).

The female genital mutilation/cutting was higher among women who have low or no education, low economic status, live in rural areas, more than 23 years, live in northern Ghana, from a Mole/Dagbani ethnic background, Moslem and are currently married. The bootstrap results (table 3) also confirm the model in table 2. By extension, it shows that female genital mutilation/cutting among more advantaged women is lower than less advantaged women.

## **6. Conclusion**

The results of this study suggest that for reducing female genital mutilation/cutting among women in the reproductive age group the strategy needs to focus attention on strengthening and enforcing the existing laws on FGM as well as formulating policies that will reduce poverty among rural women especially women in the northern Ghana where the practice is endemic. The girl child education policy must also be given all the needed resources it requires to achieve the desired set targets. The various civil society organizations must also step up their educational campaign about the effects and the long term implications associated with this negative practice which has become a social canker. The Ghanaian woman should also be empowered enough to be able to stand up against this negative cultural practice to nip it in the bud. Above all the whole issue of FGM must be tackled holistically to reduce it to the barest minimum.

The low variability in female circumcision that was explained by the independent variables used in all the regression models suggests that there were some confounding factors not accounted for. Within the limits of this research however, marital status, religion, ethnicity, age, educational level and region of residence contributed significantly in predicting female genital mutilation/circumcision.



Table 1 Socio-demographic characteristics of the study population

Variable	Ever Circumcised				Total	
	Yes		No		N	(%)
	N	(%)	N	(%)		
<b>Residence</b>						
Urban	198	(16.2)	2972	(46.1)	3170	(41.4)
Rural	1023	(83.8)	3473	(53.9)	4496	(58.6)
<b>Total</b>	<b>1221</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7666</b>	<b>(100)</b>
<b>Region</b>						
Western	13	(1.1)	484	(7.5)	497	(6.5)
Central	12	(1.0)	995	(15.4)	1007	(13.1)
Greater Accra	9	(0.7)	727	(11.3)	736	(9.6)
Volta	4	(0.3)	391	(6.1)	395	(5.2)
Eastern	6	(0.5)	363	(5.6)	369	(4.8)
Ashanti	13	(1.1)	608	(9.4)	621	(8.1)
Brong Ahafo	31	(2.5)	430	(6.7)	461	(6.0)
Northern	45	(3.7)	763	(11.8)	808	(10.5)
Upper East	423	(34.6)	912	(14.2)	1335	(17.4)
Upper West	665	(54.5)	772	(12.0)	1437	(18.7)
<b>Total</b>	<b>1221</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7666</b>	<b>(100)</b>
<b>Wealth index quintiles (Economic status)</b>						
Poorest	859	(70.4)	1816	(28.2)	2675	(34.9)
Second	181	(14.8)	1089	(16.9)	1270	(16.6)
Middle	75	(6.1)	1057	(16.4)	1132	(14.8)
Fourth	68	(5.6)	1171	(18.2)	1239	(16.2)
Richest	38	(3.1)	1312	(20.4)	1350	(17.6)
<b>Total</b>	<b>1221</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7666</b>	<b>(100)</b>
<b>Marital status</b>						
Yes Currently married	968	(79.6)	2916	(45.2)	3884	(50.7)
Yes, living with a man	35	(2.8)	920	(14.3)	955	(12.5)
No, not in union	218	(17.6)	2609	(40.5)	2827	(36.9)
<b>Total</b>	<b>1239</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7684</b>	<b>(100)</b>
<b>Ethnicity</b>						
Akan	7	(0.6)	2412	(37.4)	2419	(31.6)
Ga/Damgme	0	(0.0)	330	(5.1)	330	(4.3)
Ewe	4	(0.3)	653	(10.1)	657	(8.6)
Guan	2	(0.2)	230	(3.6)	232	(3.0)
Gruma	21	(1.7)	242	(3.8)	263	(3.4)
Mole Dagbani	873	(71.5)	1971	(30.6)	2844	(37.1)
Grusi	195	(16.0)	376	(5.8)	571	(7.4)
Mande	89	(7.3)	102	(1.6)	191	(2.5)
Non- Ghanaian	18	(1.5)	92	(1.4)	110	(1.4)
Other ethnic group	12	(1.0)	37	(0.6)	49	(0.6)
<b>Total</b>	<b>1221</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7666</b>	<b>(100)</b>
<b>Religion</b>						
Christian	431	(35.3)	4617	(71.5)	5048	(65.9)
Moslem	577	(47.3)	1284	(19.9)	1861	(24.3)
Traditionalist/spiritualist	162	(13.3)	339	(5.2)	501	(6.6)
No religion/other religion	51	(4.2)	205	(3.2)	256	(3.4)
<b>Total</b>	<b>1221</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7666</b>	<b>(100)</b>
15-19	100	(8.1)	1367	(21.2)	1467	(19.1)
20-24	92	(7.5)	996	(15.5)	1088	(14.2)
25-29	151	(12.3)	1033	(16.0)	1184	(15.4)
30-34	229	(18.7)	928	(14.3)	1157	(15.2)
35-39	212	(17.4)	841	(13.0)	1053	(13.7)
40-44	212	(17.4)	690	(10.8)	902	(11.8)
45-49	225	(18.4)	590	(9.0)	815	(10.6)
<b>Total</b>	<b>1221</b>	<b>(100)</b>	<b>6445</b>	<b>(100)</b>	<b>7666</b>	<b>(100)</b>
<b>Educational level</b>						
JHS and below	286	(23.4)	3503	(54.3)	3789	(49.3)
Secondary school +	42	(3.4)	1274	(19.7)	1316	(17.2)
<b>Total</b>	<b>328</b>	<b>(100)</b>	<b>4777</b>	<b>(100)</b>	<b>5105</b>	<b>(100)</b>

Table 2 Logistic regression model

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Age	-.040	.008	22.414	1	.000	.961	.945	.977
Educational level	.242	.076	10.222	1	.001	1.273	1.098	1.477
Religion	-.012	.004	9.254	1	.002	.988	.980	.996
Ethnicity	-.026	.008	9.420	1	.002	.975	.959	.991
Marital status	.346	.084	17.128	1	.000	1.413	1.200	1.665
Residence	-.123	.204	.364	1	.546	.884	.593	1.319
Region	-.695	.048	212.873	1	.000	.499	.455	.548
Wealth index quintiles	.068	.076	.788	1	.375	1.070	.922	1.242
Constant	8.627	.796	117.607	1	.000	5581.589		

Table 3 Bootstrap model for parameter estimates

Parameter	B	Bootstrap <sup>a</sup>				
		Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
Age	-.040	.000	.009	.001	-.058	-.021
Educational level	.242	.004	.082	.003	.094	.418
Religion	-.012	.000	.004	.001	-.020	-.005
Ethnicity	-.026	-.001	.009	.005	-.048	-.012
Marital status	.346	.001	.087	.001	.171	.511
Residence	-.123	.001	.191	.502	-.520	.249
Region	-.695	-.011	.073	.001	-.862	-.572
Wealth index quintiles	.068	.001	.072	.339	-.072	.210
Constant	8.627	.124	1.021	.001	6.739	10.927

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

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