



## SCIENTIFIC ARTICLE

## Factors Associated with Abandoning the Practice of Female Genital Mutilation in Guinea: A Secondary Analysis of 2018 Demographic and Health Survey Data

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### Abstract

**Introduction:** Despite national efforts, Guinea remains one of the countries with a high prevalence of female genital mutilation (FGM). The objective of this study is to identify the factors associated with the abandonment of FGM I, Guinea.

**Methods:** This is a secondary analysis of data from the 2018 Guinea Demographic and Health Survey. Logistic regression was used to identify associated factors.

**Results:** A total of 9858 women were included in this study. Of these, 2,743 were in favor of abandoning FGM. The results of the multivariate analysis showed that young adolescent girls, higher education, the richest wealth quintile, and Kissi ethnic group as well as living in the Faranah region were statistically associated with the abandonment of FGM.

**Conclusion:** The schooling of young girls and especially their retention in school until graduation and women's empowerment (often linked to a higher wealth quintile) would reduce female genital mutilation. Added to this is the awareness of the community and key people in the decision-making process.

### Keywords

Associated factors, Abandonment, Female genital mutilation, Guinea

### Introduction

Female genital mutilation (FGM) is the partial or total removal of a woman's external genitalia or other injury to the female genitalia for cultural or other non-therapeutic reasons [1]. FGM affects over 200 million

girls and women worldwide [2]. It constitutes a serious violation of the rights of girls and women [3]. The consequences are enormous, whether short-term, such as bleeding, infection, and HIV transmission, or long-term, such as dyspareunia, frigidity, and psychological problems [4]. Managing these complications requires enormous financial resources (\$1.4 billion per year) [4]. Despite the abandonment of this practice in Western countries and its multiple health risks, in Africa, female genital mutilation is practiced in 29 countries, with variations in the proportion of girls and women who have undergone FGM in each country. This proportion remains even higher in many African countries (such as Somalia, Mali, Guinea, Sudan...), ranging from 50 to 97% for women aged 15-49 and from 13 to 75% for girls aged 0-14 [5]. In Somalia, 84% of parents intended to excise their daughters. Excision is usually performed before the girl turns 12. The prevalence of FGM increased with age, with 52% of girls being circumcised between the ages of 7-8 and about 95% between the ages of 11-12 [6].

In Guinea, the 2018 Demographic and Health Survey revealed that 39% of girls aged 0-14 and 95% of women aged 15-49 have undergone excision [7]. This prevalence remains high despite the ban on female genital mutilation in the legislation [8].

There are many reasons for the practice of FGM.

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It is often a means of controlling premarital sexual activity, preventing female promiscuity, and preserving virginity, for fear of stigmatization or social exclusion, or of being rejected for marriage, as shown by the results of a study carried out in Guinea [9]. In the same study, some midwives stated that they would not recommend excision because of the health problems they observed in excised women, such as bleeding, pain, and loss of consciousness during childbirth. Female genital mutilation is generally practiced because of social pressure, even leading to its medicalization to reduce complications [10-12]. A study carried out in Tanzania showed that the abandonment of female genital mutilation is considered a loss of the culture left by grandparents [13]. This shows that it takes tremendous efforts from stakeholders to abandon female genital mutilation in Africa. Studies on the factors associated with female genital mutilation have shown that socio-demographic variables such as age, education, ethnicity, and wealth quintile are associated with female genital mutilation [14,15].

## Objective

To determine the factors associated with the abandonment of female genital mutilation in Guinea.

## Methodology

### Study setting

Guinea is a coastal country located in West Africa. It covers 245,857 square Km with a population of around 13 million inhabitants. It has 8 administrative regions, 33 prefectures, and 5 urban municipalities in Conakry, the capital city. The total fertility rate in 2018 was 4.8 and 55.3% of deliveries are attended by a qualified personnel [16]. The under-15 population represented 44.08% [16]. The number of women of childbearing age (15-49) was around 3 million [2,882,949] 6. % and those aged 0-14 represented 14.8% [7].

In 1969, Guinea adopted in the Penal Code (article 265) the prohibition of any mutilation of the genitals of men and women under penalty of a life imprisonment. Following the recommendations of the International Conference on "Zero Tolerance of FGM" held in Addis Ababa, Ethiopia, in February 2003, a ten-year strategic plan (2003-2013) was also developed and implemented. In 2008, articles 407 to 409 of the Guinean Children's Code were adopted prohibiting female genital mutilation, which provides that female genital mutilation is punishable by a fine of up to 3 million Guinean francs and imprisonment for up to 3 years. In 2010, a joint decree was passed by the Ministries of the Interior, Social Affairs and Health in which the practice of female circumcision in Guinea was criminalized. In 2011, a National Committee against Female Genital Mutilation was established under the Ministry of Social Welfare, the Promotion of Women and Children. The 2016 penal

code confirms Guinea's commitment to criminalizing FGM in its articles 258 to 261 by extending penalties to all perpetrators of such an offense [17].

## Study type

This is a secondary analysis of data from the 2018 Guinea Demographic and Health Survey.

## Study population

All women aged 15 to 49 who were interviewed during the 2018 Demographic and Health Survey collection period made up the study population.

## Sampling

A total of 10,506 women aged 15 to 49 were surveyed using the women's individual questionnaire during data collection. For the purposes of this study, only 9858 women were selected after extracting missing data.

## Study variables

Women's views on the practice of female genital mutilation were the dependent variable in this study. This variable has been transformed into a dichotomous variable with "continue and stop" categories.

The independent variables were socio-demographic factors such as the woman's age, level of education, residence, region, FGM status, i.e. whether the woman has been circumcised or not, ethnicity, religion, and wealth quintile.

## Data analysis

The Stata 15.1 was used for data analysis of the. The dependent variable "women's opinion on FGM" was dichotomized by considering the modalities "it depends" and "don't know" as missing values. After the descriptive analysis, simple logistic regression revealed the association of the dependent variable and each of the independent variables. Statistically significant variables at the 20% level were included in the final binary logistic regression model after checking for multicollinearity.

## Ethical considerations

This study used secondary data from Guinea's 2018 Demographic and Health Survey. We requested and received permission to use the data from this study online via the DHS (<https://dhsprogram.com>) platform.

## Results

### Socio-demographic characteristics

Participants in the 15-19 age group were most represented, with a proportion of 22.7%, followed by those in the 25-29 age group (17.7%). The Boké and N'Zérékoré regions were the most represented, with 14.2% and 14.0% respectively, and almost 2/3 of participants lived in rural areas (63.2%). It also emerged

**Table 1:** Sociodemographic characteristics of participants (DHS Guinea 2018).

Variables	N (9858)	Percentage
<b>Age</b>		
15-19	2236	22.7
20-24	1547	15.7
25-29	1742	17.7
30-34	1345	13.6
35-39	1212	12.3
40-44	901	9.1
45-49	875	8.9
<b>Region</b>		
Boké	1397	14.2
Conakry	1284	13.0
Faranah	1163	11.8
Kankan	1095	11.1
Kindia	1342	13.6
Labé	1062	10.8
Mamou	1131	11.5
N'Zérékoré	1384	14.0
<b>Residence</b>		
Urban	3624	36.8
Rural	6234	63.2
<b>Education level</b>		
Not in school	6840	69.4
Primary	1139	11.6
Secondary	1551	15.7
Upper	328	3.3
<b>Religion</b>		
No religion	87	0.9
Muslim	8759	88.9
Christian	1001	10.2
Animist	11	0.1
<b>Ethnic group</b>		
Foreign	38	0.4
Susu	1990	20.2
Fulani	3952	40.1
Malinke	2682	27.2
Kissi	529	5.4
Toma	136	1.4
Guerzé	531	5.4
<b>Wealth quintile</b>		
Very poor	1976	20.0
Poor	1886	19.1
Average income	1826	18.5
Rich	2105	21.4
Very rich	2065	20.9
<b>FGM status</b>		
Not	382	3.9
Yes	9476	96.1
<b>Opinion on FGM</b>		
Abandonment	2743	27.8
Continuity	7115	72.2

that 2/3 of the women (69.4%) had no schooling, and only 15.7% had secondary education. Nearly 9/10 of the participants were Muslim (88.9%). In terms of wealth quintile, the "very poor" represented 1/5 of the participants (20.0%), while the "rich" modality made up 21.4% of the group. Almost all participants had undergone FGM (96.1%).

With regard to their opinion on the perpetuation of FGM in Guinea, almost 3/4 of the women were in favor of continuing the practice (Table 1).

To better understand the factors linked to the opinion in favor of abandoning FGM, a univariate analysis was carried out, followed by a multivariate analysis.

### Univariate analysis

Table 2 presents the results of the univariate analysis. The descriptive analysis shows that the Faranah region is more favorable to FGM abandonment, followed by the N'Zérékoré region. Female genital mutilation abandonment remains higher in urban than in rural areas. The results show that participants with a higher level of education, the richest wealth quintile and women who have not been circumcised are mostly in favor of abandoning female genital mutilation in Guinea.

Overall, the univariate analysis showed that region, place of residence, education, ethnicity, religion, wealth quintile, and mother's FGM status were statistically significant for the abandonment of female genital mutilation in Guinea.

### Associated factors in multivariate analysis

On multivariate analysis, the variables statistically associated with FGM abandonment in this study are age, ethnicity, FGM status, region, education level, and wealth quintile.

The multivariate analysis shows that adolescents aged 15-19 are more likely to abandon FGM in Guinea (22%). This difference is statistically significant at the 5% threshold.

Holding other variables constant in the model, women of Kissi ethnicity, compared with foreign women, have a 78% (OR = 0.22) chance of abandoning FGM, and this difference is statistically significant (P-value < 0.001).

Also, women living in the regions of Faranah (OR = 0.12) and N'zérékoré (OR = 0.25) have a greater chance of escaping the practice of FGM by 88% and 75% respectively, compared to women living in the Boké region.

Women with higher levels of education have an 83% chance of not undergoing female genital mutilation (OR = 0.17) compared to women with no education at all. This association is statistically significant at the 5% threshold (P-value < 0.001) when the other variables in the model remain constant.

**Table 2:** Univariate analysis of factors associated with the discontinuity of female genital mutilation in Guinea according to DHS 2018.

Variables	N	OR(gross)	IC (95%)	P-value
<b>Age</b>				
15-19	2236	0.50	[0.41-0.60]	0.000
20-24	1547	0.61	[0.50-0.74]	0.000
25-29	1742	0.64	[0.52-0.77]	0.000
30-34	1345	0.75	[0.61-0.92]	0.007
35-39	1212	0.90	[0.73-1.11]	0.356
40-44	901	0.97	[0.77-1.21]	0.794
45-49	875	1		
<b>Region</b>				
Boké	1397	1		
Conakry	1284	0.26	[0.21-0.32]	0.000
Faranah	1163	0.13	[0.11-0.16]	0.000
Kankan	1095	0.32	[0.26-0.40]	0.000
Kindia	1342	0.66	[0.53-0.82]	0.000
Lab	1062	0.51	[0.41-0.64]	0.000
Mamou	1131	0.68	[0.54-0.85]	0.001
Nzérékoré	1384	0.15	[0.12-0.18]	0.000
<b>Residence</b>				
Urban	3624	0.60	[0.55-0.65]	0.000
Rural	6234	1		
<b>Education</b>				
Not in school	6840	1		
Primary	1139	0.75	[0.65-0.86]	0.000
Secondary	1551	0.40	[0.35-0.45]	0.000
Upper	328	0.17	[0.14-0.22]	0.000
<b>Religion</b>				
No religion	87	1		
Muslim	8759	2.04	[1.32-3.15]	0.001
Christian	1001	0.39	[0.25-0.62]	0.000
Animist	11	6.41	[0.78-52.40]	0.083
<b>Ethnic group</b>				
Foreign	38	1		
Susu	1990	2.60	[1.33-5.08]	0.005
Fulani	3952	2.41	[1.24-4.69]	0.009
Malinke	2682	1.18	[0.60-2.29]	0.624
Kissi	529	0.22	[0.11-0.44]	0.000
Toma	136	0.37	[0.17-0.78]	0.009
Guerzé	531	0.68	[0.34-1.34]	0.269
<b>Wealth quintile</b>				
Very poor	1976			
Poor	1886	0.91	[0.79-1.06]	0.265
Average income	1826	0.86	[0.74-1.00]	0.051
Rich	2105	0.76	[0.66-0.88]	0.000
Very rich	2065	0.53	[0.46-0.61]	0.000
<b>FGM status</b>				
Not	382	1		
Yes	9476	13.64	[10.44-17.83]	0.000

**Table 3:** Multivariate analysis of factors associated with the discontinuity of female genital mutilation in Guinea according to DHS 2018.

Variables	Odd ratio	Interval	P value
<b>Age</b>			
15-19	0.78	[0.63 0.96]	0.022
20-24	0.92	[0.73 1.15]	0.471
25-29	0.87	[0.70 1.08]	0.233
30-34	0.89	[0.71 1.11]	0.324
35-39	0.97	[0.77 1.23]	0.841
40-44	0.97	[0.76 1.25]	0.857
45-49	1		
<b>Ethnic group</b>			
Susu	1.33	[0.61 2.92]	0.469
Fulani	1.24	[0.57 2.73]	0.579
Malinke	1.07	[0.49 2.36]	0.851
Kissi**	0.23	[0.10 0.52]	0.000
Toma	0.45	[0.18 1.08]	0.075
Guerzé	0.88	[0.39 1.98]	0.758
Foreign	1		
<b>Region</b>			
Boké	1		
Conakry	0.58	[0.46 0.73]	0.000
Faranah	0.13	[0.10 0.16]	0.000
Kankan	0.37	[0.28 0.47]	0.000
Kindia	0.70	[0.55 0.88]	0.003
Lab	0.39	[0.31 0.51]	0.000
Mamou	0.59	[0.45 0.76]	0.000
N'Zérékoré	0.26	[0.20 0.34]	0.000
<b>Education</b>			
No Education	1		
Primary	0.81	[0.69 0.95]	0.012
secondary	0.40	[0.35 0.47]	0.000
Upper	0.17	[0.13 0.22]	0.000
<b>Wealth quintile</b>			
Very poor	1		
Poor	0.89	[0.75 1.06]	0.217
Medium	0.80	[0.68 0.95]	0.013
Rich	0.67	[0.56 0.79]	0.000
Very rich	0.48	[0.39 0.58]	0.000
<b>FGM status</b>			
Yes	1		
Not**	0.11	[0.08 0.14]	0.000

NB: \*\*P < 0.001; \*P < 0.01

Furthermore, uncut women have an 89% (OR = 0.11) chance of abandoning female genital mutilation. When the other variables remain constant in the model, the

difference is statistically significant at the 5% threshold (P-value < 0.001).

Finally, as the woman's wealth quintile increases, the chances of disapproving of female genital mutilation also increase (very wealthy 53% and wealthy 33% chance). These results are statistically significant at the 5% level (Table 3).

## Discussion

Participants aged 15-19 were statistically associated with FGM abandonment. The same observation was made in a study in Burkina Faso, which found that girls aged 15-24 and 25-34 were more likely to abandon FGM than those aged 34 and over [18]. This could be explained by the possible effects of interventions such as awareness-raising and behavior-change communications in favor of FGM abandonment, which has enabled young girls to learn about the risks and consequences of female genital mutilation. Older women also see FGM practices as an inheritance from their parents and grandparents that must be maintained, even if they have negative effects on their health.

The results of this study in Guinea show that women from the Kissi ethnic group were less favorable to the continuity of female genital mutilation. A study carried out in Chad showed that women from the "Gorane, Kanemu-Borno" ethnic group were less likely to be cut than those from the "Sara" ethnic group [19]. These results can be explained by the fact that in the forest region, girls are not excised until they reach adulthood, by which time they can make they can decide not to, as a result of awareness-raising activities in churches and in the community.

Regional variations have also been reported in other studies. In this series, women living in the Faranah region were more likely to abandon FGM than those in the Boké region. In Ghana, a study showed that women living in the Pusiga district were more likely to be cut than their counterparts in the Bawku district [20].

Level of education is another factor reported in this study, which was also referred to in research in Sierra Leone, which also indicated that women with a higher level of education had a higher probability of declaring that FGM should be stopped [21]. Likewise, in Sudan, those with primary or higher levels of education were less likely to undergo FGM than those who were illiterate [22]. A study carried out in Egypt, using data from the 2008 DHS, found that the mother's level of education had a positive impact on reducing support for FGM [23]. Better knowledge of the risks and consequences of FGM taught in schools and easy access to the media could explain this result. In addition, women's higher level of schooling gives them more options in life and changes their perception of the impurity of female genital mutilation, as well as changing their attitudes toward the practice.

Women who had not undergone female genital mutilation were more likely to abandon it. Of nine studies in a systematic review, seven found that having a mother who had undergone FGM/FGC increased the likelihood of the daughter undergoing FGM/FGC [24].

Finally, another factor associated with the abandonment of female genital mutilation is the highest wealth quintile. This finding has been reported in studies in Ethiopia and Burkina Faso [15,25]. This could be explained by the fact that women's economic empowerment enables them to strengthen their decision-making power in the household, thereby resisting certain practices unfavorable to the health of women and their children.

### Strengths and limitations

This study used data from the Demographic and Health Survey. These data were collected cross-sectionally. For this reason, the authors do not have the means to establish a causal link between the dependent variable and the independent variables.

Despite these limitations, the results found could contribute to a better understanding of the factors associated with the abandonment of female genital mutilation in Guinea. They can also contribute to the implementation of promising strategies for possible improvement in the fight against female genital mutilation.

### Practice and research implications

The results of this study should enable stakeholders in the fight against genital mutilation to promote strategies to prevent this practice in Guinea. Support for women through income-generating activities, schooling for young people, as well as community education aimed at changing attitudes towards FGM.

Research should focus on the reasons for regional, economic, and ethnic differences, and on the content of school curricula and methods of involving mothers who have not undergone FGM. Research into the factors associated with FGM is also needed to better understand these factors.

### Conclusion

Female genital mutilation is a violation of the rights of women and girls. Data from the DHS clearly show that just over ¼ of women support the abandonment of FGM. This indicates the persistence of the practice in Guinea and calls for vigorous action such as getting young girls into school, supporting women through income-generating activities, and continuing to raise awareness of the risks and consequences in the fight against this harmful practice.

### Ethical Approval and Consent to Participate

Ethical approval was not required for this study as

the data are secondary and are available in the public domain. More details regarding DHS data and ethical standards can be found at

<http://dhsprogram.com/data/available-datasets.cfm>.

This study does not have a participation section (secondary data analysis), so it is not applicable.

### Consent to Publication

Not applicable.

### Availability of Data and Materials

The data from the Demographic and Health Survey (DHS) of Guinea, analyzed during this study, are available and accessible on the website of the DHS program [<http://dhsprogram.com>].

### Conflict of Interest

The authors state that they have no competing interests.

### Financing

Not applicable.

### Authors' Contributions

AD designed the study, performed the data analysis, and wrote the results. AD, TS, RD, SC, MT and MDB critically reviewed the manuscript for its intellectual content. All authors read and approved the final version of the manuscript.

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