

# **Female Empowerment and Female Genital Cutting in Egypt, Kenya, Mali, and Nigeria**

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## ***Abstract***

Using Demographic and Health Survey data drawn from IPUMS-DHS for four countries, we study whether particular types of female empowerment are associated with the discontinuation of the female genital cutting (FGC). We employ logistic regression analyses to determine the association of two dimensions of gender empowerment—household decision-making and level of education—on whether or not women had their youngest daughter cut. In addition, to capture the normative framework surrounding FGC in different communities, we measure the percentage of women who believe FGC is necessary for marriage within each of 27 DHS geographic units. While women's education was associated with a decrease in the probability of FGC for daughters in all countries, the effects of the other measures of women's empowerment were more mixed. In a pooled analysis, regional beliefs that FGC is necessary for marriage were positively associated with the decision to have one's youngest daughter cut.

## ***Introduction***

In the world today, more than 125 million girls and women have experienced female genital cutting (FGC) (UNICEF 2013). The practice is mostly carried out in 29 countries in Africa and the Middle East. It can result in negative health consequences, such as severe bleeding at the time of the cutting and, later, cysts, infections, infertility, and childbirth

complications (UNICEF 2013). Recent evidence suggests that the practice of FGC is diminishing in many areas (Yoder, Wang, and Johansen 2013). However, levels remain very high in some parts of the world. Recognizing that mothers are typically responsible for having their daughters cut, in this paper we ask whether particular types of female empowerment are associated with the discontinuation of the practice. Using Demographic and Health Survey data drawn from IPUMS-DHS, we focus on mothers in four countries: Egypt, Kenya, Mali, and Nigeria.

The World Health Organization declared FGC a violation of the human rights of girls and women in the 1990s, and over the last two decades governments, organizations, and activists have targeted the practice (Boyle 2002; Boyle and Corl 2010; UNICEF 2013). Many suggest that the best way to eliminate FGC is to empower women (see Boyle and Corl 2011 for a review). Whether and how female empowerment works for this issue, however, is an open question. The practice takes on different meanings in different settings and for different groups of people (Boyle 2002; Wade 2011). For example, for nationalists in Kenya in the 1940s FGC was a marker of local culture and resistance to colonization (Kenyatta 2015[1938]; Thomas 2000) while for western feminists in the 1970s, FGC was a sign of global patriarchy (Daly 1990; Hosken 1979). In many settings, irrespective of its broader meaning, FGC ensures a daughter's marriageability, and arranging for the cutting is a core obligation of mothers (Mackie 1996). Depending on FGC's meaning for women, when women have more power and autonomy, they may use their authority to combat the practice or they may use it to secure their daughters' futures in a system where FGC is normative, thus reinforcing the practice. This relationship may depend on the nature of a mother's empowerment in combination with the strength of the FGC norm in an area.

In this analysis, we consider the association of two dimensions of power—household decision-making and level of education—on whether or not women had their youngest daughter cut. [Before we present this research at PAA, we will also incorporate whether women have personal earnings as another dimension of women's empowerment.] To capture the meaning of FGC in different communities, we measure the percentage of women who believe FGC is necessary for marriage within each of 27 DHS geographic units; a greater percentage signifies greater normative support for FGC in the region.

### ***Framework***

To understand why mothers would choose to forego FGC, the first step is to understand why daughters are cut in the first place. Most agree that FGC continues in part because it is a tradition. For example, western researchers Lane and Rubinstein (1996) relate their interaction with women in a rural Egyptian location in the early 1990s:

In the rural Egyptian hamlet where we have conducted fieldwork some women were not familiar with groups that did not circumcise their girls. When they learned that the female researcher was not circumcised, their response was disgust mixed with joking laughter. They wondered how she could have thus gotten married and questioned how her mother could have neglected such an important part of her preparation for womanhood. It was clearly unthinkable to them for a woman not to be circumcised

In contexts such as this, FGC is fully institutionalized. To *fail* to arrange for FGC for one's daughter would be considered child abuse.

Education would seem to be very influential in this setting. Changing behavior may be as straightforward as informing women about the shakiness of the physical justifications for FGC

and the negative health consequences of the practice. In recent years, such information has often been provided through formal education systems, leading to the following hypothesis:

***H1. The more education a woman receives, the less likely she will have her daughter cut.***

However, a different perspective emphasizes that women's personal beliefs are secondary to the societal context in which she is operating. Even if a woman personally opposes FGC, if most people in her community believe FGC is a necessary precondition to marriage, she may still have her daughters cut to ensure their future happiness and financial security (Mackie 1996).

This reasoning leads to the following hypothesis:

***H2. The greater the percentage of women in a region who think FGC is necessary for a woman to get married, the more likely a woman in that region will have her daughter cut.***

Ahlberg and others (2000) propose another possibility. These researchers posit that, although women typically take responsibility for children's FGC, men are the implicit enforcers of the practice. In Kenya, they found that men professed no interest in FGC until the practice was threatened. At that point, men began to express their desire that FGC continue. If patriarchy is a driving factor in the perpetuation of FGC, women who have more authority within their households should show less inclination to have their daughters cut:

***H3. Women who make major household decisions on their own or who make major household decisions jointly with their husbands are less likely to have their daughters cut than women whose husbands or partners make these decisions.***

Our statistical analysis considers the impact of each of these factors in four African countries.

### *Analyzing FGC within and across national contexts*

We draw on the wealth of data from the Demographic and Health Surveys (DHS) to observe gender power relations and their associations with FGC. We use four DHS surveys: Egypt 2008, Mali 2006, Nigeria 2008, and Kenya 2008. In these preliminary analyses, we focus on women's education and decision-making arrangements as the key variables for assessing the woman's power within the household. The dependent variable is a binary outcome of whether or not a daughter within the household has been circumcised.

We select our analytic sub-sample from DHS surveys to ensure that current characteristics of a respondent adequately reflect the household power dimensions at the time of the decision. The practice of FGC varies across countries in terms of the timing of circumcision. For example, the vast majority of girls in Mali are circumcised at infancy while most female circumcisions in Kenya occur at 8 years old. Thus, the decision to circumcise may not be appropriate for parents with only young daughters. To avoid this potential bias, we only include women who have at least one daughter who has recently reached the age at which circumcision occurs. Specifically, our sample includes women with at least one daughter older than the average age of circumcision in their region of residence but younger than two standard deviations above the average age of circumcision.

We employ a series of logistic regressions of whether at least one daughter is circumcised on measures of power and a set of control variables. In our analyses, education is treated as a marker of power as higher education levels are known to have numerous psychological and income benefits for women. In addition, the education system is a primary source of information about the health consequences of FGC. The DHS data provides measures of education in attainment levels (none, primary, secondary, higher) and in the total years of education. While

educational attainments reflect meaningful categories of earnings capacities, the multi-country nature of our analyses makes years a more consistent cross-country comparison. We include years of education as a proxy of power.

Decision-making is another commonly used measure of women's empowerment as it reflects whether and to what extent there is a gendered distribution of power within a household. The nature of this indicator's association with daughter's FGC will provide insight into whether men or women are driving the perpetuation of the practice. Respondents are asked a series of questions regarding who has the final say on large household purchases, visits to family and relatives, and the woman's healthcare. While some DHS include six household decision questions, we focus on three that are consistent across all four of our country surveys. We construct a count variable for the number of decisions made by the respondent only (0 to 3) or jointly with the partner (0 to 3). We leave decisions made solely by partner or another household member out of the models so that the models are not over-specified.

To assess the normative importance of FGC in specific regions, we calculate the percentage of DHS respondents in each region who indicate that FGC is necessary before a girl can be married.

Other factors related with FGC include: age of the respondent, radio in the home, electricity in the home, a dummy variable for Muslim respondent, whether the respondent herself is circumcised, and the DHS wealth quintiles. [The final version of this paper will include a detailed description of the control variables.] We estimate logistic regressions for each country separately and then together in a pooled analysis to assess the relevance of the women's different sources of power on decisions to have daughters cut.

## Results

Table 1 provides the means and percentages of all variables used in our analyses for each country and for the pooled sample of four countries. Kenya has the lowest proportion of respondents with at least one circumcised daughter at 24 percent. This is compared to nearly 79 percent of daughters cut in Mali. Despite very high rates of female circumcision in Egypt, relatively few respondents have a daughter who has also been circumcised (42 percent). Among the samples, Egypt has the highest rates of electricity (99.9 percent) and radio or television ownership (99.2). In our sample, the vast majority of respondents in Egypt and Mali are Muslim (over 90 percent) while 53 percent of respondents from Nigeria and 23 percent of respondents from Kenya identify as Muslim. Overall, 73 percent of all respondents from the pooled sample are circumcised while those rates vary from 48 percent in Kenya and Nigeria to over 90 percent in Egypt and Mali.

**Table 1: Descriptive Statistics**

	Egypt	Mali	Nigeria	Kenya	Total
Percent with at least one daughter circumcised	41.9%	78.7%	28.6%	23.7%	45.4%
Owns Radio or TV	99.2%	76.8%	76.9%	70.4%	81.6%
Electricity in the HH	99.9%	15.8%	40.7%	20.7%	47.7%
Age (in single years)	39.8	33.8	34.1	38.1	35.6
Wealth Quintiles					
Poorest	17.5%	19.6%	15.2%	23.4%	17.9%
Poor	18.0%	20.9%	17.6%	16.6%	18.3%
Middle	18.9%	21.1%	19.8%	18.2%	19.4%
Rich	20.8%	19.6%	23.1%	19.2%	21.0%
Richest	24.8%	18.8%	24.4%	22.5%	23.3%
Percent Muslim	96.0%	92.1%	53.3%	22.8%	69.9%
Respondent is circumcised	93.9%	88.8%	48.9%	48.0%	73.0%
Years of education	6.7	0.9	4.2	5.9	4.2
Respondent only decisions (0 - 3)	0.4	0.6	0.3	0.7	0.4
Joint decisions (0 - 3)	1.9	0.3	1.1	1.5	1.1
Percent agree FGC is important for marriage	63.2%	11.2%	8.9%	6.6%	24.4%
Total Sample (N)	7,265	6,329	8,412	1,654	23,660

Education varies significantly by country. A plurality of women in our Egyptian sample have attained a secondary education, while the majority of the women sampled in Mali and Nigeria have no education. Nearly half of women our sample of women in Kenya have a primary education. The average years of education within each country reflect those differential average attainment levels, ranging from an average of 0.9 in Mali to 6.7 in Egypt.

Across all samples, the number of respondent-only decisions is less than one, indicating that it is unusual for decisions to be made by the woman alone. Conversely, joint decisions are fairly common, with the exception of Mali, as between 1.1 (Nigeria) and 1.9 (Egypt) decisions are made cooperatively between partners. In terms of FGC favorability, over half of women in the Egypt sample (63 percent) say the practice is important for future marriage prospects while the favorability level is much lower in Mali (11 percent), Nigeria (9 percent) and Kenya (7 percent). The percent of favorability in Mali is particularly surprising, given the high prevalence of female circumcision in the country for both respondents and eligible daughters.

The logistic regression results in Table 2 display the log odds of having a daughter who was circumcised within 5 years prior to the survey and among respondents with at least one daughter at a normatively appropriate age of circumcision. In Egypt and Mali, the odds of circumcision a daughter is higher for those with a radio or television in the home. Across all countries, each additional year of age is associated with 4 to 17 percent higher odds of circumcising a daughter. We also observe a progressively negative relationship between wealth and daughter circumcision in Egypt though the wealth effect is not similarly observed in the other three countries. Across the four countries, we also observe that Muslim respondents are far more likely to circumcise their daughters from 264 percent in Mali to 358 percent in Egypt. It is



important to note that most Muslims around the world do not practice FGC; even in Africa, the practice is not necessarily associated with Islam. This effect is being driven by Egypt and Mali, where nearly all women are Muslim and the practice of FGC is high. Lastly, respondents who have been cut are far more likely to have their daughters cut.

Table 2 shows that within each country, higher levels of education, controlling for other factors, are associated with significantly reduced odds of circumcising a daughter. Each additional year of education reduces the odds of daughter circumcision by 1.4 percent in Egypt, 8 percent in Mali, 3 percent in Nigeria, and nearly 7 percent in Kenya. These consistently negative relationships support our first hypothesis that women with higher levels of education are less likely to circumcise their daughters.

Turning next to household decision-making, in Egypt, women who make more household decisions alone have a lower odds (approximately 10 percent) of circumcising a daughter. Conversely, women in Mali who make more household decisions autonomously are nearly 10 percent more likely to circumcise their daughters. We observe no significant relationship between respondent-only decisions and daughter circumcision in Nigeria and Kenya. However, in terms of joint decisions, the odds of circumcising a daughter are reduced by 10 percent in Egypt and 23 percent in Kenya for each household decision made jointly. In Mali, we observe that for each decision made jointly, the odds of circumcising a daughter are increased by 13 percent. Ultimately, women's greater involvement in household decision making in Mali increase the odds of circumcising a daughter, suggesting that households in which decisions are dominated by a male partner or husband tend to have lower levels of daughter circumcision.

*Table 2: Separate Country Logistic Regressions Predicting at least One Circumcised Daughter*

	Egypt	Mali	Nigeria	Kenya
<b>Radio in the home</b>	1.100 (0.341)	1.176 (0.112)	1.134 (0.111)	0.546** (0.113)
<b>Electricity in the home</b>	1.086 (0.937)	1.137 (0.172)	1.175 (0.111)	0.983 (0.372)
<b>Age (in years)</b>	0.994 (0.00435)	1.075*** (0.00567)	1.040*** (0.00436)	1.071*** (0.0149)
<b>Wealth Quintiles</b>				
Poorest (omitted)				
Poor	0.723*** (0.0541)	0.890 (0.110)	1.344* (0.167)	0.991 (0.272)
Middle	0.525*** (0.0439)	0.847 (0.104)	1.003 (0.132)	0.722 (0.195)
Rich	0.372*** (0.0383)	0.862 (0.116)	0.968 (0.149)	0.388** (0.119)
Richest	0.180*** (0.0218)	1.033 (0.209)	0.833 (0.144)	0.293* (0.147)
<b>Urban Residence</b>	1.193* (0.100)	1.064 (0.127)	1.033 (0.0791)	0.865 (0.317)
<b>Muslim</b>	3.240*** (0.532)	3.007*** (0.371)	3.153*** (0.241)	5.015*** (1.256)
<b>Respondent circumcised</b>	58.08*** (24.09)	68.35*** (9.168)	70.36*** (7.647)	118.5*** (50.90)
<b>Education (in years)</b>	0.986** (0.00515)	0.921*** (0.0152)	0.969*** (0.00783)	0.931** (0.0245)
<b>Decisions made by respondent only (0 - 3)</b>	0.898** (0.0353)	1.102* (0.0488)	0.969 (0.0411)	0.893 (0.0925)
<b>Decisions made jointly (0 - 3)</b>	0.903*** (0.0236)	1.132* (0.0664)	0.981 (0.0269)	0.773** (0.0653)
Observations	7,265	6,329	8,412	1,654

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05

Separate country logistic regressions indicate consistent effects for education but mixed relationships between decision-making and daughter circumcision. To examine these further, we pool the four samples. From the pooled results, we observe that each additional year of education decreases the odds of circumcising a daughter by approximately 2 percent. Further, higher levels of household wealth are associated with lower likelihoods of circumcising a daughter. Compared to the lowest wealth group, each successive increase in wealth status decreases the odds of circumcision by nearly 15 to 20 percent. These findings from the pooled analysis are suggestive of socioeconomic differences in the decision to circumcise a daughter.

We hypothesized that decisions to circumcise are also related to the broader normativity of female circumcision. The results when including the percentage of respondents who think FGC is important for marriage (within a region) supports that hypothesis. For each percentage increase in views of FGC's importance for marriage, the odds of daughter circumcision increases by 3 percent.

Our third hypothesis, that women's greater involvement in household decision is negatively related with daughter circumcision was supported in Egypt and Kenya but contradicted in Mali. In the pooled analysis, we observe that each additional household decision made jointly decreases the odds of daughter's circumcision by 3 percent while we observe no significant relationship for woman's autonomous decision-making. Overall, the hypothesis that women's enhanced involvement in decision-making affects daughter's FGC is supported in contexts where decisions are made cooperatively between partners but not for women's autonomous decision-making.

**Table 3: Pooled Country Logistic Regression**

	Pooled	Pooled
<b>Radio in the home</b>	1.103 (0.0674)	1.069 (0.0658)
<b>Electricity in the home</b>	1.618*** (0.0973)	1.205** (0.0766)
<b>Age (in years)</b>	1.033*** (0.00257)	1.037*** (0.00263)
<b>Wealth Quintiles</b>		
Poorest (omitted)		
Poor	0.776*** (0.0428)	0.862** (0.0479)
Middle	0.557*** (0.0314)	0.712*** (0.0417)
Rich	0.439*** (0.0250)	0.644*** (0.0431)
Richest	0.275*** (0.0167)	0.447*** (0.0365)
<b>Urban Residence</b>	1.046 (0.182)	1.309*** (0.0669)
<b>Muslim</b>	3.451*** (0.182)	3.069*** (0.166)
<b>Respondent circumcised</b>	68.64*** (5.400)	62.78*** (4.956)
<b>Education (in years)</b>		0.976*** (0.00398)
<b>Decisions made by respondent only (0 - 3)</b>		0.998 (0.0229)
<b>Decisions made jointly (0 - 3)</b>		0.967* (0.0164)
<b>% Region: FGC important for marriage</b>		1.033*** (0.00214)
<b>Country</b>		
Egypt (Omitted)		
Mali	18.34*** (1.333)	74.12*** (9.876)
Nigeria	5.566*** (0.351)	28.49*** (3.705)
Kenya	4.099*** (0.409)	19.79*** (3.022)
<b>Observations</b>	23,660	23,660

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05

## *Discussion and Next Steps*

In all models, our preliminary analyses support the hypothesis that higher levels of women's education is linked with decreased likelihoods of circumcising a daughter. The local normativity of FGC, defined in this case as the percentage of women who think circumcision is important for marriage prospects, generally associates with higher odds of circumcising a daughter as well. Our hypothesis regarding women's decision-making received only partial support. Country effects varied and, in the pooled analysis, joint decisions are negatively associated with circumcising a daughter while respondent-only decisions are generally not significant. Taken together, the empowerment framework for predicting female circumcision is somewhat supported. Understanding the differential and context specific dimensions of empowerment and empowerment outcomes can be useful toward the prediction of daughter circumcision decisions.

Moving forward, we will continue to refine the specification our models and check the robustness of our results. We will carefully review our sample selection criteria. We also plan to incorporate additional sets of measures and analytic techniques. For example, to further explore the relationship between women's household power and daughters' FGC, we will integrate husband characteristic data from DHS male recode files to construct additional measures of household power dimensions. While decision-making arrangements can reflect relational dynamics, other comparative characteristics such as woman's education relative to partner, income relative to partner, and occupations of both respondents can provide additional insight into the factors that contribute to circumcision decisions. We suggest that household power dynamics would provide a more detailed explanation of empowerment effects on circumcision.

In addition to the preliminary findings, we will further test our hypotheses by employing a series of interactions of women's decisions and contextual measures of FGC normativity. In particular, the differing effect of women's autonomous decisions on daughter circumcision in Egypt and Mali, two countries with near universal levels of FGC among respondents, implies that women's favorability of FGC may be declining in Egypt compared to Mali. Thus, we will also examine regional averages in daughter circumcision and normative perceptions of FGC across time using additional waves of DHS data. To analyze region averages across time, we will utilize time-series regression techniques.

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