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Intergenerational Transmission of Female Genital Cutting: Community and Marriage Dynamics

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Abstract

Objective: This study examined how characteristics of households and communities are linked with the intergenerational transmission of gender inequality and particularly female genital cutting (FGC).

Background: Human capital perspectives suggest that socioeconomic inequality predicts FGC continuation. This study contributes to discussions of institutional change by examining the association of decisions to forego FGC with household decision-making patterns and community gender norms.

Method: Multilevel logistic regression was deployed to analyze a pooled sample (N = 12,144) of six Demographic and Health Surveys from Burkina Faso, Egypt, Guinea, Kenya, Mali and Nigeria. A series of models examined how decision-making styles, both at the household and community levels (2,524 DHS cluster aggregations), and community levels of FGC, correspond with the risk of having a daughter cut.

Results: Results show that daughters are less likely to be cut when parents make key household decisions jointly. Autonomous decision-making by women at the community level was associated with lower odds of daughters being cut. However, at the community level, the impacts of women's household decision-making were attenuated when FGC was more prevalent.

Conclusion: The findings suggest that women's decision-making status is an important factor in FGC abandonment although that association is less robust when FGC is highly institutionalized. This study provides new insights into how women, families, and communities can disrupt the intergenerational transmission of behaviors associated with institutionalized gender inequality.

Keywords

Children; Cross-cultural; Decision making; Human Rights; Intergenerational; Marriage

Background

In this article, we ask what characteristics of communities and families correspond with changes in institutionalized gender norms. We focus on one institutionalized practice that

has been targeted by the international community – female genital cutting (FGC) – to better understand changes in behavior across generations. FGC refers to a set of practices that vary in their particulars but involve the alteration or removal of a girl's genitalia (World Health Organization [WHO], 2014). FGC takes several different forms, all of which can result in negative health consequences (WHO, 2014). Across communities, there is variability in the rationales behind FGC, but the procedure is broadly connected with themes of chastity, transitions to womanhood, and marriageability (Boyle 2002; Gruenbaum 2006; Hernlund 2000). African feminists since at least the 1950s and the international community since the 1970s, have mobilized to encourage abandonment of the practices (Boyle, 2002). Nevertheless, many communities continue to embrace FGC, perpetuating an institutional environment that makes it difficult for families to forego the cutting of their daughters (Mackie, 1996). In recent decades, this has begun to change. In most communities where it occurs, the incidence of FGC has decreased over the past two decades (Yoder, Wang, & Johansen, 2013).

We focus particularly on the relationship between household decision-making patterns, a reflection of women's power within families, and the likelihood of daughter's FGC. To answer our research question, we analyze a sample of women with daughters who were recently exposed to the risk of FGC using data from six Demographic and Health Surveys (DHS; www.idhsdata.org and dhsprogram.com/data/): Burkina Faso, 2010; Egypt, 2014; Guinea, 2012; Kenya, 2014; Mali, 2012–13; and Nigeria, 2013. Estimating the risk of FGC is difficult because daughters who are not cut at a particular moment may undergo the procedure later (Yoder et al., 2013). We address this concern by using a unique sampling technique to include mothers whose daughters are above the average age of FGC in their community. This allows us to distinguish girls who have not yet been cut from those who will never be cut. Using this sampling technique, we examine the extent to which household decision-making, within individual families and in the aggregate, as well as community characteristics, correspond with a daughter's FGC outcome. By identifying the tools that are important for the abandonment of FGC, our study provides new insights into how women, families, and communities can disrupt the intergenerational transmission of behaviors associated with institutionalized gender inequality.

Female Genital Cutting

The United Nations' Sustainable Development Goals (SDGs) seek to reduce all forms of FGC, which they define as “harmful practices” (SDG 5.3). The WHO (2007) identifies four types of FGC. Type 1, termed clitoridectomy, is the removal of the clitoris or its hood. Type 2, excision, is clitoridectomy along with the total or partial removal of the labia minora. The most extreme form of FGC—infibulation or “Type 3”—creates a covering seal over a portion of the vaginal opening by cutting and appositioning the labia. Type 3 FGC may or may not be accompanied by clitoridectomy. Estimates suggest that approximately 10 percent of cut women have experienced Type 3 FGC; nearly all of these women live in (or have migrated from) the Horn of Africa (UNICEF, 2016). Types of FGC that do not fit into the first three categories are termed Type 4. Type 4 FGC typically involves surface cuts or scratches to a girl's genitals. While all forms of FGC can result in negative health consequences (Mwanri & Gatwiri, 2017; WHO, 2014), Type 3 FGC is associated with the

worst health outcomes (WHO, 2006). In the world today, approximately 200 million girls and women are cut (UNICEF, 2016), but there is evidence that the practice is being abandoned by some families.

Within the six countries studied here, Type 2 (clitoridectomy) is the most common form among women who have experienced FGC. Type 3 FGC (infibulation) is uncommon, constituting less than 10% in 21 of the 37 regions studied. In Nigeria, Type 4 FGC is most common; about 35% of women cut in Nigerian regions experienced Type 4 “angurya” or “gishri” cuts, which are cuts or scratches to the genitals, but not the removal of flesh. These national distinctions highlight the importance of accounting for community contexts when studying FGC outcomes. Declines in FGC are not uniform, as the practice varies considerably by communities, religious groups, and socioeconomic conditions. Abandonment of FGC is most dramatic among girls in Burkina Faso, Guinea and Mali (Population Reference Bureau, 2017).

To assess where, when, and how FGC is being abandoned, it is first important to understand why the practice is perpetuated in the first place. Typically, when it is practiced, FGC is perceived as a marker of female purity, faithfulness, cleanliness, and sexual inaccessibility (Abdelshahid & Campbell, 2015; Van Rossem & Gage, 2009; Yount, 2002). Families cut their daughters to prevent promiscuity and premarital sex, and potential husbands select wives who are cut to ensure the paternity of offspring (Onyishi, Prokop, Okafor, & Pham, 2016; Ross, Strimling, Ericksen, Lindenfors, & Mulder, 2016). For example, in Bobo-Dioulasso, Burkina Faso, one man explained in an interview that excised women are better at controlling themselves, and women who have not been cut “never stay at home. I am not sure that these girls can stay faithful to their husbands” (Jirovsky, 2010, p. 89). Studies show that cut women are no more chaste than uncut women (Mpofu, Odimegwu, De Wet, Adedini, & Akinyemi, 2017), but the perception persists. A complementary perception, which research also refutes, is that cut women are more fertile and have better experiences with childbirth (WHO, 2006; Yount & Carrera, 2006). Opting to forego FGC can result in community condemnation and isolation, placing a girl’s economic security at risk (Jirovsky, 2010; UNICEF, 2013).

FGC may also serve as a rite of passage into adulthood. In some communities, a cohort of girls are cut together, at the same time as, but segregated from, a cohort of boys. Because male and female “circumcision” are coordinated, community members tend to see them as equivalent. FGC in this manifestation is a sign of maturity, including the ability to endure pain without complaint (Ahmadu, 2007; Kenyatta, 1938; Prazak, 2007; Winterbottom, Koomen, & Burford, 2009). Temporary isolation of the girls often accompanies FGC, with education on intimacy and other topics provided by female elders in the community. For example, among the Sosso in Guinea, most girls received instruction for one to three months following FGC (Yoder, Camara, & Soumaoro, 1999). FGC may be a community event, prompting celebration (Prazak, 2007).

In some communities, families associate FGC with Islam and see cutting as a pious act (Gruenbaum, 2005; Hayford & Trinitapoli, 2011). Gosselin (2000) explains that among the Mande in Mali, FGC, which was once a puberty ritual, has also become connected with a

“purified” version of Islam. As we elaborate below, communities that are predominantly Muslim may also enforce strict sex segregation, which may uniquely influence the intergenerational transmission of FGC.

The pressure to have girls cut often comes from community and family members, particularly from older women who seek to secure their granddaughters’ marriageability (Howard & Gibson, 2018; Mackie & LeJeune, 2009). Even if women would personally prefer not to have their daughters cut, if they live in an area with a high percentage of FGC, they may experience intense pressure to perpetuate the practice (Knight & Ensminger, 1998; Ross et al., 2016; Shell-Duncan et al., 2011). Previous research points to an institutionalized pattern of perpetuation in which individual, familial, and community characteristics assign more value to girls who are cut (Gosselin, 2000; Shell-Duncan, Wander, Hernlund, & Moreau, 2011).

Governments in all six countries studied here began new or renewed efforts to reduce the prevalence of FGC in the 1990s; all have laws against the practices. The practices are also similar in their treatment by international organizations, which view all forms of FGC as a violation of women’s rights (OHCHR et al., 2008; UNFPA, 2014; UNICEF, 2013). Scholars and journalists debate the meaning of the practices and wisdom of international involvement (Wade, 2011), but the international community’s position is clear: all variants of FGC are a barrier to gender equality (see Hashi & Sharafi, 2007). The attention of international actors has provided some impetus for change in these practices, undercutting their institutionalization in many local contexts (Boyle 2002).

Hypotheses

At the individual level, human capital theories assume that gender inequality can be overcome, one person at a time, by enhancing individual women’s resources, such as education, work experience, and income. Human capital theories posit that inequality occurs when some individuals in a community have less human capital than others. The solution to inequality is to increase the resources (e.g., education, work experience, income) of the underprivileged. In support of the theory, studies of FGC consistently find that women with more human capital are more likely to oppose FGC (Boyle, McMorris, & Gomez, 2002; Hayford, 2005; Modrek & Liu, 2013; Williams & Sobieszcyk, 1997). For example, in Egypt, women who had at least a secondary education, and earned cash were less likely to intend to have their daughters cut (Afifi, 2009; see also Sayed, El-Aty, & Fadel, 1996).

Nevertheless, there are limitation to human capital theories. They tend to overlook institutional barriers that can limit women’s ability to exercise agency, that is, transform resources into the achievement of individualized goals (Kabeer, 1999; Mitra & Singh, 2007). At the household level, research shows that increasing women’s resources does not always benefit women and can sometimes even be detrimental to them (at least in the short term). For example, in contexts where intimate partner violence is condoned, women’s higher levels of education and earnings can actually increase their risk of physical violence if their attainment exceeds that of their male partners (Svec & Andic, 2018; Weitzman, 2014). Other studies find that women’s enhanced access to cash and credit benefits households more than

women themselves (Garikipati, 2008; Molyneaux & Thomson, 2011). In addition, women are embedded within communities where gender roles and male privilege are normatively proscribed. They may use their increased human capital to perpetuate rather than upend gendered institutions.

The continuation of FGC provides a case to study the intergenerational transmission of gender norms generally because decisions for cutting are central to childrearing and operate within broader systems of gender inequality. A human capital approach would predict that an increase in personal capital (e.g., education, earnings) will empower women to forego FGC for their daughters. We build on that individualistic orientation by also considering how household dynamics and community norms influence women's decisions to have their daughters cut.

Women's abilities to make major decisions within their households can be one manifestation of their agency, because households are sites where gender roles and decision-making strategies play out daily (Kabeer, 1999; Upadhyay et al., 2014; Besera & Roess, 2014). Decision-making within households can take several forms. Women may defer to their partners on major household decisions; they may discuss important issues with their partners and come to decisions jointly, or they may make major decisions on their own without consulting their partners. The latter two scenarios—in which women make decisions jointly with their partners or autonomously—reflect more input from women and thus more potential for them to exercise agency. We hypothesize that women's ability to participate in major household decision-making will give them more space to forego FGC for their daughters:

Hypothesis 1: The more women are involved in household decisions (autonomously or jointly with their partners), the less likely their daughters will be cut.

Considered from a different angle, autonomous decision-making may signal gender-segregated households in which there is a clear separation between men's and women's responsibilities within a patriarchal system (Greenstein, 1996; Gruenbaum, 2001). If this is the case, women's autonomous decisions may not automatically translate into gender egalitarian behaviors, particularly with respect to the continuation of highly normative outcomes such as FGC. The extent to which wives and husbands discuss and mutually agree on major decisions, may be more important. Men and women making decisions jointly may indicate more cooperation and more equal power between partners (Hawkins, Marshall, & Meiners, 1995; Hindin & Adair, 2002; Vogler, Lyonette, & Wiggins, 2008). In our statistical models, we therefore distinguish women who make autonomous decisions from women who make decisions in collaboration with their partners, a distinction that has not been considered in other studies of FGC.

Families are one institutional context that affects mothers' abilities to exercise agency to forego FGC for their daughters. Broader community norms are another. In some communities, FGC was once simply taken for granted, as this quote from ethnographers Lane & Rubinstein (1996, p. 36) illustrates:

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.

Even after mothers begin contemplating the “unthinkable,” community pressures may still tend to hold normative practices in place. The context of reproduction influences the calculus of child rearing decisions (Reason 2004). Foregoing FGC can mean the sacrifice of social networks, concerns over fidelity, and family and daughter ostracism, all of which threaten the marriageability of uncut daughters (Battle, Hennink, & Yount, 2017; Mackie, 1996; Onyishi et al., 2016). Thus, even when a woman questions the wisdom of FGC, if all her peers are having their daughters cut, she is more likely to do the same (Hayford, 2005; Mackie, 1996). This leads to our next hypothesis:

Hypothesis 2: The greater the prevalence of FGC within a community, the more likely daughters in that community will be cut, regardless of their mothers’ individual characteristics.

Daughters’ marriageability is an especially important concern for mothers in resource-poor communities where economic opportunities for women are low (Afifi, 2009; Al-Khulaidi, Nakamura, Seino, & Kizuki, 2013; Yount, 2002). For example, in many rural communities that practice FGC, women’s roles are limited to domestic caretaking. In these circumstances, women are economically dependent on male breadwinners, so ensuring daughter marriageability is one of a mother’s most important responsibilities (Gruenbaum, 2001; Mackie & LeJeune, 2009). To the extent the perpetuation of FGC is underpinned by women’s economic dependence on men, then community-wide economic opportunities for women are a possible step toward the elimination of the practices. Education is one pathway to greater economic opportunity, leading us to hypothesize:

Hypothesis 3: The greater the average years of women’s education in a community, the less likely daughters in that community will be cut, regardless of their mothers’ individual characteristics.

We have demonstrated the ways in which the FGC/marriageability link can be “motivated by male domination and held in place by inequalities between men and women” (Mackie & LeJeune, 2009). Although it is typically mothers who are responsible for having a daughter cut, as noted, they may make their decision in the context of male domination in the community. One way of determining men and women’s relative power within communities is to consider the aggregate statistics on household decision-making patterns. If male heads of households typically make major decisions on their own, that is a sign of a patriarchal system. If, in contrast, women are typically involved in decision-making, that could suggest less patriarchal norms. In this case, women’s general involvement may include autonomous decisions or joint decisions. In this regard, we hypothesize:

Hypothesis 4: The greater women are involved in major household decisions, on average, within a community, the less likely daughters in that community will be cut, regardless of their mothers’ individual characteristics.

The prevalence of FGC reflects its institutionalization within a community. When institutionalization is high, the effect of women's greater authority within households may be attenuated. Thus, we hypothesize:

Hypothesis 5: The greater the prevalence of FGC in a community, the lower the magnitude of community decision-making and daughter FGC associations.

In sum, we anticipate that family and community characteristics will be associated with the intergenerational transmission of FGC above and beyond the effect of individual mothers' characteristics.

Data and Methods

Sample

For our analysis, we used six recent nationally-representative DHS surveys: Burkina Faso 2010 (Institut National de la Statistique et de la Démographie & ICF International, 2012), Egypt 2014 (Ministry of Health and Population [Egypt] & ICF International, 2015), Guinea 2012 (Institut National de la Statistique & ICF International, 2013), Kenya 2014 (Kenya National Bureau of Statistics & ICF International, 2015), Mali 2012–13 (Cellule de Planification et de Statistique et al., 2014), and Nigeria 2013 (National Population Commission [Nigeria] & ICF International, 2014). We also relied on the documentation at IPUMS-DHS (Boyle, King, & Sobek, 2017) to assess the comparability of survey questions across the DHS surveys. We chose these six countries because their surveys gathered the data necessary to limit our sample and construct our dependent variable. As noted, the six countries represent a broad range of the types of women and communities that practice FGC. It is possible, however, that our results would be somewhat different (especially with respect to control variables, such as Islam), if we were able to analyze more countries.

The DHS relies on a stratified cluster sampling technique to produce nationally representative samples of women of childbearing age. For DHS surveys, clusters are selected within sampling regions which often, but not always, correspond to administrative units. DHS clusters, which are nested within designated regions, are comprised of a collection of households in urban and rural communities. Previous research has shown that DHS clusters can be appropriate for studying community effects (Hayford and Trinitapoli 2011; Kravdal 2006). We included cluster-level measures to approximate community contexts.

Our sample included women of childbearing age (defined as ages 15–49) who had daughters above the normative age of FGC within their regions. Our sample selection strategy addressed two issues: daughters' exposure to FGC and the timeliness of that risk. It was important that our sample not conflate girls who had not yet been cut with girls who would never be cut (Shell-Duncan, 2016). This is complicated by the timing of cutting (Yoder, Abderrahim, & Zhuzhuni, 2004). The average age of FGC varies across countries and regions, from infancy in some parts of Mali and Nigeria to around 8 years old in one region in Egypt. To make certain girls in our sample had been exposed to the risk of FGC, we calculated 95 percent confidence intervals around the mean ages of cutting for women ages 15 to 24 in each DHS region. We then limited our sample to mothers with at least one

daughter whose age exceeded the upper bound of the confidence interval. By focusing on older daughters, we could be confident that the girls had been exposed to the risk of FGC.

In terms of timeliness, the cross-sectional nature of these data complicated our interpretation of independent and dependent variable associations. Community, household, and respondent characteristics were current, but daughters' cuttings happened at some point in the past. To minimize the time differential between the dependent and independent variables in our models, we restricted our sample to women whose daughter reached the target age within the past five years. As some women had multiple daughters within our sample selection age range, we only included the youngest daughter to minimize this time difference. The time-order issue had a few implications for independent variables that tend to remain stable for adults, such as education and household wealth. It was likely to introduce more error for variables that tend to change over time, such as cash earnings.

Initially, there were 31,949 mother-daughter pairs, including repeated observations for mothers with multiple daughters, across the six countries. After we limited the sample to youngest daughter above the normative age of cutting for her region, who entered the eligible age-range within five years of the survey, our sample was reduced to 16,864 mother-daughter pairs, with no repeated observations. Declines in sample size were more pronounced in regions where the normative age of cutting is higher.

We restricted our sample to mothers who were currently partnered because only these women were asked questions about household decision-making. This also helped ensure comparability in the characteristics of women across countries, as one country sample (Egypt) only included ever-married women. A small number of women who reported that someone other than they or their husbands make major household decisions were also excluded. These exclusions resulted in a sample size of 15,611.

Because we were interested in communities where FGC is prevalent enough to be considered normative by some segment of the population, we dropped regions from our analysis where rates of FGC for all women of childbearing age were less than 20 percent. Regions where less than 20% of women had been cut do not satisfy a scope condition for our hypotheses on the community norms of FGC. Dropping these regions resulted in the exclusion of 386 clusters (in Burkina Faso, Egypt, Kenya and Nigeria), and an N of 13,152. Among the remaining 2,524 clusters, the FGC prevalence ranged from 20% to 100%.

A small number of clusters consisted of 1 – 9 observations, making aggregated measures less reliable and more heavily weighted by the characteristics of the women in the analytic sample. Excluding clusters that had less than 10 observations results in a loss of 632 observations. Finally, we dropped 376 pairs because they were missing values on our key variables. Our final sample included 12,144 mother-daughter pairs.

To check whether our selection techniques biased the sample, we compared the aggregate characteristics of the respondents in our sample to that of the full sample of respondents among the regions included in this study. Except for age—the women in our sample are older on average because of our selection strategy—we found that the numbers were comparable.

Dependent Variable

The dependent variable, whether the respondent's daughter was cut, was provided directly from the DHS. Although the surveys' wording varied slightly, each asked about the FGC status of a respondents' living daughters, as well as other information, such as the age at which each daughter was cut. In Burkina Faso, Kenya, Mali and Nigeria, the surveyors collected this information for all daughters between 0 and 14 years old. In Guinea, data is collected for daughters up to 15 years and in Egypt data is collected for daughters up to 19 years old. The dependent variable was dichotomous; daughters who are cut were coded as 1 and daughters who were not cut were coded as 0. The percentage of daughters in our sample who experienced FGC was 54% (see Table 1).

Individual-Level Independent Variables

At the individual level, we used two measures of human capital: a woman's educational attainment and whether a woman earns cash from her work. The DHS includes a variable for respondents' highest level of completed education by four categories: none, primary, secondary, and higher than secondary. Education levels vary considerably across country; Burkina Faso and Guinea have virtually no women with more than a secondary education. Thus, we combined secondary and higher education. The education variable was coded: None = 0; Primary = 1; Secondary or higher = 2. In the sample, 64.8% of women have less than a primary education (see Table 1).

Women who are working any type of job may earn cash, in-kind payments, or a combination of cash and in-kind. We dichotomized the above earnings types by whether a woman earns any cash (1) compared to women with no earnings or only in-kind earnings (0). Substantial numbers of women were not asked the earnings questions because they indicated they are not working or are domestic caretakers. We assumed that women who do not work do not earn any cash; they are also coded as 0. The percentage of women earning cash in the sample is 43.9% (see Table 1).

In addition to a mother's socioeconomic characteristics, there are other individual and household factors that can influence a woman's likelihood of having a daughter cut. We included the respondent's FGC status and her age in single years. The average age of mothers is 37 years old (see Table 1). This is somewhat older than the mean for the full DHS samples because our sample was restricted to women with daughters above the average age of FGC. In these data, 89% of mothers were cut. We also controlled for whether the respondent was Muslim, as FGC is associated with Islam in some of the countries, especially Egypt and Mali. Most mothers in the data identified as Muslim, accounting for 77% of the sample (see Table 1). We included a measure for whether a mother had a daughter who died because the death of a daughter may make a mother more concerned about the risks of FGC. While it is rare, FGC can result in severe complications that lead to death. We included an urban/rural variable as well. Approximately 33% of women live in urban households (see Table 1). Due to cross-national variations in defining urban and rural contexts, the urban/rural differences distinguish respondents within countries rather than across countries. Finally, household wealth is calculated in the DHS based on durable goods

and assets (Rutstein & Johnson, 2004). Overall, the wealth quintiles were balanced in these data with the poorest households accounting for the largest wealth group at 20.6%.

Decision-Making Variables

The DHS include a series of questions on who has the final say on key household decisions. We focused on four: who in the household has the final say on the woman's health care, on large household purchases, on whether the woman can visit family or relatives, and on how to spend the husband's earnings. For each item, respondents are given choices that include the woman alone, woman jointly with her partner, partner only, or someone else. We included a variable for the number of decisions a woman makes autonomously (0 to 4) and jointly (0 to 4). In our analyses, the husband/partner making decisions was the omitted category. The mean number of autonomous decisions for women in our sample was low at 0.4; the mean number of joint decisions was 1.2 (see Table 1). (We excluded responses on two decisions from the decision-making variables, on small household purchases and foods cooked each day, because their distributions were quite distinct from the other four decisions.)

Community-Level Independent Variables

We calculated four aggregate statistics at the cluster level, which we treated as community contexts: 1) the percentage of women of childbearing age who are cut; 2) the average years of women's education; 3) the cluster average for women's autonomous decisions (0 to 4), and 4) the cluster average for joint decision-making (0 to 4). All aggregate variables were calculated using the full DHS sample of women—not using our more limited sample. As noted earlier, we calculated aggregated measures in clusters with at least 10 respondents. The mean number of observations per cluster was 29.9 with a range of 10 to 79 respondents in each cluster.

Models

A central premise of this study is that decisions on FGC are a function of both family and community characteristics. The dependent variable, whether a daughter has or has not undergone some form of FGC was dichotomous. Standard logistic regression techniques would produce biased results, given that observations are not independent. Thus, we ran a series of multilevel logistic regression models of the odds of having a daughter cut on the explanatory factors listed above. By accounting for community-level variations, measured by DHS clusters, in the observed associations between women and household measures and daughter FGC, the models enabled us to assess the generalizability of these connections across six sub-Saharan African countries as well as assess the association of community characteristics with the likelihood of a daughter being cut. The general form of the multilevel logistic regression models was:

$$\text{Logit}\pi_{ij} = X'_{ij}\beta + Y'_{ij}\mu_j$$

where π_{ij} was the probability of a daughter being cut for a mother, i , in cluster, j ; X'_{ij} was the vector of covariates defined as mother's characteristics or community contexts; β is the

corresponding vector of fixed parameters for individual and community measures; Y'_{ij} was a vector of covariates which vary randomly at the community (DHS cluster) level; and u_j was the residual at the community (DHS cluster) level. All multilevel logistic regressions were performed using the MELOGIT command in STATA 15 statistical package. Our model specifications allowed our main effects to vary randomly across cluster to determine if higher levels of female decision-making are consistently associated with lower probabilities of daughter FGC across communities. Compared to one-level models, results from the multilevel models are similar in strength and directionality, though the latter produces more conservative standard error estimates.

Findings

In Table 2, we show the multilevel logistic regression results. Model 1 assessed the relationship of individual, household and women's decision-making statuses on whether a daughter is cut. Consistent with other studies, the highest levels of education were negatively related with daughters' FGC. Compared to women with a less than primary education, a daughter's FGC status was not significantly different for women with a primary education. However, those with a secondary or higher attainment had 38% reduced odds (OR = 0.62) of having a daughter cut in Model 1. The findings were similar in Model 2, which included cluster aggregates. Women with a secondary or higher attainment had 43% lower odds of having a daughter cut (OR = 0.57). Mothers earning cash was not significantly related to having a daughter cut in Model 1, and was actually positively associated with odds of daughter's FGC in Models 2 through 4. We address this surprising finding in more detail below.

In terms of household decision-making, in Model 2 through Model 6, joint decision-making at the household level was negatively associated with the odds of having a daughter cut. In Model 2, each decision made jointly between partners corresponded with 7% reduced odds (OR 0.93) of having a daughter cut. We found similar results for joint decision-making in Model 3 and Model 4, which included the cluster average levels of autonomous and joint decision-making, respectively. Women's levels of autonomous decision-making, at the individual level, were not associated with the odds of having a daughter cut in any model. The results partially support Hypothesis 1; that women's involvement in household decision-making is negatively associated with the odds of having a daughter cut. While we did not observe a significant association with autonomous decisions, the results showed that joint decision-making was consistently associated with lower odds of having a daughter cut. In terms of household dynamics, our findings indicated that egalitarian household structures, rather than divided decision-making, were more consistently linked with FGC abandonment. The different associations of daughter FGC and autonomous and joint decision-making in the household indicated that relational dynamics, understood here as divided or egalitarian, can reflect a key micro-level pattern of FGC continuation.

Models 2 through 6 also showed that the prevalence of FGC at the community level was positively associated with a daughter's odds of cutting. In these models, each percentage increase in FGC prevalence at the community level were associated with a 4% (OR = 1.04) to 6% (OR = 1.06) increased odds of a daughter being cut. These results support Hypothesis

2, that increasing levels FGC normativity in a community are positively associated with a daughter's FGC status.

This study also assessed whether women's educational attainment at the community level was linked with daughter FGC status. Despite the negative association of education and daughter FGC at the individual level, we observed the opposite association of education at the community level. We expected that higher average years of education in a community would be associated with reduced odds of having a daughter cut. However, each increase in the average years of education was associated with 5% (OR = 1.05) increased odds of having a daughter cut in Models 2 and 3 and a 6% (OR = 1.06) increased odds in Model 4. These results contradicted expectations in Hypothesis 3. The community education effect, similar to mother's cash earnings, was negatively linked with a daughter's FGC status in bivariate models but we observed significant and positive associations in multivariate specifications. Thus, the negative association was patterned on the normative context itself, where the effect of education may have been mitigated by stronger norms surrounding FGC.

Hypothesis 4 asked whether women's decision-making involvement, aggregated to the community level to signify a more gender equal context, facilitates FGC abandonment. Model 3 through Model 6 include community averages for autonomous decision-making and joint decision-making. In these models, we observed that higher levels of autonomous decision-making, at the community level, corresponded with significantly reduced odds of having a daughter cut (OR = 0.70). In Model 3, each unit increase in the on average number of decisions made by women alone was associated with 30% reduced odds of girls' FGC. In Model 4, the odds of a daughter being cut were not significantly associated with the average levels of joint decision-making at the community when individual factors were controlled, although the relationships to the odds was in the expected direction.

Model 5 unpacked the effects of community-level joint and autonomous decision-making at different levels of FGC prevalence. We included interactions of FGC prevalence with autonomous and joint decision-making averages, respectively. (There were 1,397 distinct values for the FGC by autonomous decision-making interaction and 2,069 distinct values for the FGC by joint decision-making interaction.) In Model 5, the interaction term, FGC prevalence with autonomous decisions, was significant and positive (OR = 1.04). This indicates that autonomous decision-making is linked with substantially reduced odds of having a daughter cut in contexts where FGC is less prevalent. Every percentage increase in FGC mitigated the negative association of autonomous decision prevalence by 4%. These findings suggest that autonomous decision-making correspond with higher odds of having a daughter cut when FGC is highly normative. In Model 6, the interaction for joint decision-making at the community level showed a similar pattern: every percentage increase in FGC mitigated the negative association of joint decision prevalence by 1%. Taken together, these findings support Hypothesis 5, suggesting that a daughter's risk of FGC operates at the confluence of gender and FGC contexts.

The positive associations of education and women's cash earnings with the odds of daughter FGC were surprising, so we conducted additional analyses to better understand them. Models (not shown) that only included women's socioeconomic status resulted in negative

associations with daughter FGC. Cash earnings and cluster average levels of education were both associated with lower odds when a mother's own FGC status and community levels of FGC were not included. The change in directionality with the inclusion of FGC contexts, both in the family and in the community, suggest that the context of FGC mediates the human capital links with decisions on girls' FGC. On the one hand, the majority of non-cash earners had their daughter cut (58%) whereas a slight majority of cash earners did not have their daughters cut (51%). We conclude that earnings and education, while plausibly resources used to buck tradition, could also be used to access safer and more sanitary conditions for the procedure. Thus, we interpret our results to mean that cash earnings and education effects may operate within the confines of FGC normativity.

We also acknowledge that although only joint decisions were negatively associated with daughter FGC, differences between autonomous and joint decisions were not large. In Table 2, we note that the confidence intervals mothers' autonomous and joint decision-making odds ratios did overlap. In these data, women's decision-making outcomes are limited to three outcomes: the final say is autonomous, joint or partner. As these are mutually exclusive categories, one category, partner had to be omitted. In doing so, coefficients for both autonomous and joint decisions reflect the risk of daughter FGC, relative to partner decisions. That means that partner decisions generally are linked with the highest odds of having a daughter cut while obscuring the differences between autonomous and joint decisions.

Discussion

In this research, we set out to examine the importance of family and community contexts on the intergenerational transmission of FGC. Even if individuals begin to question a practice like FGC, a strong local expectation that it is necessary for daughters to enter social networks and desirable marriages can continue to hold the practice in place (Mackie, 1996; Shell-Duncan et al., 2011). Our findings are consistent with earlier studies showing that women in communities with high levels of FGC, regardless of their individual characteristics, are more likely to choose to cut their daughters (Boyle et al., 2002; Hayford, 2005). However, patterns of behavior are also reflective of particular dimensions of individual and community conditions.

This research adds nuance to ideas about gender and social change by considering how individuals and social institutions can frame commitments to continue FGC. This is particularly evident when examining decision-making within families. At an individual level and as a social institution, patterns of household decision-making are associated with mothers' decisions to continue FGC. Our models consistently show, at the individual level, that families in which spouses make more decisions jointly are more likely than other families to forego FGC for their daughters. Mothers in joint decision-making households may be more likely to ask their partners about FGC rather than assuming partners support the practice. If men respond with opposition to FGC, or even agnosticism, this may make women feel empowered to forego the practice. Another possible explanation for our findings is that equal partnerships between men and women provide stronger ideological foundations for challenging FGC than women's independent authority within households. Yet another

explanation is that election into egalitarian marriages and opposition to FGC are both caused by a third factor, such as socially progressive attitudes. In any case, the finding that FGC for daughters is less likely with more joint decision-making is important. It suggests that changing the institution of FGC may be less about increasing women's independence from men and more about advocating for equality within marriage.

The non-significance of autonomous decision-making at the household level is surprising (although the relationship is in the expected, negative direction). However, we also acknowledge that these results may reflect the more variable nature of autonomous decisions. For example, we cannot identify in these data whether autonomous decisions are a result of a mother's personal independence or a gender-segregated household in line with patriarchal norms. These differences in the subjective meaning of autonomous decisions may also obscure the associations we observe. Additional research is necessary to unpack the implications of this finding.

Community patterns of household decision-making are also distinct in terms of their associations with the risk of daughters' FGC. In this regard, more autonomous decision-making across households is consistently negatively associated with the risk of daughters being cut. The association between women's autonomous decision-making at the community level and the risk of FGC is more consistently linked with lower odds of having a daughter cut. The community level of joint decision-making on the other hand is less consistent, despite being linked with lower odds of daughter FGC within households. We suggest that these distinctions may be reflective of the varying meanings of relational dynamics. Autonomous decision-making may signal households in which there is a clear separation between men's and women's spheres, which is often an indicator of gender inequality (Greenstein, 1996; Gruenbaum, 2001). Yet, a normative context in which women are more generally autonomous can signify a community environment that facilitates FGC abandonment.

Importantly, we tested interactions of autonomous and joint decision-making at the community level to further investigate girls' FGC risk within particular configurations of contexts. The results show that women's general involvement in household decisions correspond with lower odds of having a daughter cut if FGC prevalence is low. However, when FGC prevalence is high, those same decision-making factors can increase the risk of FGC. This is true for levels of both autonomous and joint decision-making by women. Thus, the association of community patterns of women's decision-making involvement with FGC continuation is conditioned on the relative normativity of FGC.

Our findings are generally consistent with previous research showing that enhancing women's human capital, especially through education, corresponds with changes in institutionalized practices such as FGC. The findings concerning cash earnings are substantively consistent with prior research showing that earnings are not necessarily a resource for individual women; working women may not have control over how their earnings are spent. Education, in contrast, is a more intrinsic benefit for individuals (Musick, 2002; Spierings, Smits, & Verloo, 2010). What one learns through education can be shared but it cannot be taken away.

Our findings have broader implications for the study of intergenerational transmission of gendered norms and behaviors generally. For example, studies of the gendered nature of children's household contributions find that children's contributions tend to mirror their parent's division of labor (Cordero-Coma & Esping-Andersen, 2018; Farre & Vella, 2013). At the same time, daughters' perceptions of gender roles, while associated with mothers' attitudes, are also conditioned on each daughter's own experiences (Moen, Erickson, & Dempster-McClain, 1997). Our study differs in the sense that we assess the transmission of childrearing behaviors rather than attitudes. Yet, we suggest that the parallels between attitude and behavioral transmissions are apt in this study. A mother's decision concerning her child's FGC reflects the broader gender ideological basis for cutting. Yet, individual and family factors, such as mother's education and egalitarian decision-making structures, may be a disruptive process in that transmission. Given that the odds of FGC are reduced in households with more joint decision-making, those same egalitarian behaviors may have long lasting importance for girls' own childrearing decisions in the future. We suggest that future studies would benefit from examining these parental decision-making patterns on FGC and other gendered institutions.

Methodologically, this study used a unique sampling technique that allowed us to consider actual outcomes for girls rather than relying on their mothers' attitudes or reported intentions. At the same time, this study has some limitations. Surveys rely on the self-reporting of behavior, which may not always be accurate. In particular, anti-FGC laws can affect the reporting of FGC in complex ways (Shell-Duncan, Hernlund, Wander, & Moreau, 2013). Some factors that may affect FGC could not be tested because of data limitations. In some communities, ethnic divisions and hierarchies or unique extended family household structures could be influential in the perpetuation of FGC. Likewise, local anti-FGC interventions may be present in some communities but not others. We could not capture these things in our statistical models. Our models show associations, but do not establish direct causal links among variables. Finally, DHS questions concerning women's economic activities are rather superficial. This may have influenced our findings concerning women earning cash.

In 2015, the Population Council (2018) crafted a research and action agenda to facilitate the abandonment of FGC. The agenda includes a call for more multivariate analyses of DHS data to explain where and why FGC norms are changing. This study is one response to that call. Future research might consider how the types of FGC have changed—moving from forms with greater to fewer health consequences would be an alternative way of measuring change. Our findings also suggest the importance of future studies that more fully explore the relationships between wives and husbands, their respective attitudes toward FGC, and the ultimate outcome for their daughters' experience of FGC.

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Table 1.

Descriptive Statistics, Individual-Level Variables and Community Aggregate Variables

	Total (N)	Mean/%	Standard Deviation
Dependent Variable	12,144		
Daughter is cut		54.4%	
Mother/Household Characteristics			
Education level			
<i>Less than Primary</i>	7,872	64.8%	
<i>Primary</i>	1,615	13.3%	
<i>Secondary or higher</i>	2,657	21.9%	
Mother earns cash		43.9%	
Age of mother		37.0	6.5
Mother is cut		88.9%	
Islam		76.5%	
At least one daughter died		23.1%	
Wealth quintiles			
<i>Poorest</i>	2,501	20.6%	
<i>Poor</i>	2,436	20.1%	
<i>Middle</i>	2,298	18.9%	
<i>Rich</i>	2,487	20.5%	
<i>Richest</i>	2,422	19.9%	
Urban resident		32.9%	
Mother's autonomous decisions (0 – 4)		0.4	0.8
Mother's joint decisions (0 – 4)		1.2	1.5
DHS Cluster Characteristics	2,524		
Percent FGC		85.1%	19.6
Average education of women, years		5.2	4.1
Average autonomous decisions		0.4	0.4
Average joint decisions		1.6	1.1

Table 2.

Multilevel Logistic Regression Predicting Daughters' FGC Using Pooled DHS Data for Burkina Faso, Egypt, Guinea, Kenya, Mali, and Nigeria

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Education level						
Less than Primary (ref)						
Primary	1.00 (0.84 – 1.20)	1.00 (0.83 – 1.21)	1.01 (0.84 – 1.22)	1.00 (0.83 – 1.21)	1.01 (0.83 – 1.22)	1.00 (0.83 – 1.21)
Secondary or higher	0.62*** (0.52 – 0.75)	0.57*** (0.47 – 0.70)	0.57*** (0.47 – 0.70)	0.57*** (0.47 – 0.70)	0.56*** (0.46 – 0.69)	0.57*** (0.46 – 0.70)
Mother earns cash	0.99 (0.87 – 1.13)	1.22** (1.07 – 1.39)	1.22** (1.07 – 1.39)	1.21** (1.06 – 1.38)	1.22** (1.07 – 1.39)	1.22** (1.07 – 1.39)
Age of mother	0.99 (0.98 – 1.00)	0.99** (0.98 – 1.00)	0.99** (0.98 – 1.00)	0.99* (0.98 – 1.00)	0.99** (0.98 – 1.00)	0.99** (0.98 – 1.00)
Mother is cut	33.58*** (25.51 – 44.21)	19.97*** (15.31 – 26.06)	20.07*** (15.38 – 26.19)	19.98*** (15.31 – 26.07)	20.81*** (15.92 – 27.22)	20.51*** (15.69 – 26.80)
Islam	4.11*** (3.45 – 4.89)	2.93*** (2.46 – 3.49)	2.84*** (2.38 – 3.38)	2.96*** (2.48 – 3.53)	2.77*** (2.32 – 3.30)	2.87*** (2.41 – 3.42)
At least one daughter died	1.04 (0.96 – 1.13)	1.08 (1.00 – 1.18)	1.08 (1.00 – 1.18)	1.08 (1.00 – 1.17)	1.08 (1.00 – 1.18)	1.08 (1.00 – 1.17)
Urban resident	0.71** (0.55 – 0.90)	0.86 (0.67 – 1.12)	0.88 (0.68 – 1.14)	0.85 (0.66 – 1.10)	0.88 (0.68 – 1.13)	0.86 (0.67 – 1.12)
Wealth quintiles						
Poorest (ref)						
Poor	0.79** (0.66 – 0.94)	0.81* (0.68 – 0.96)	0.81* (0.68 – 0.96)	0.80* (0.67 – 0.96)	0.81* (0.68 – 0.97)	0.81* (0.68 – 0.97)
Middle	0.72*** (0.59 – 0.86)	0.73** (0.61 – 0.89)	0.74** (0.61 – 0.89)	0.73** (0.60 – 0.88)	0.75** (0.62 – 0.91)	0.75** (0.62 – 0.90)
Rich	0.58*** (0.47 – 0.71)	0.59*** (0.48 – 0.73)	0.59*** (0.48 – 0.73)	0.59*** (0.48 – 0.72)	0.61*** (0.50 – 0.75)	0.60*** (0.49 – 0.74)
Richest	0.47***	0.52***	0.52***	0.51***	0.55***	0.53***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Mother's autonomous decisions (0 – 4)	(0.36 – 0.61) 1.02	(0.40 – 0.67) 0.98	(0.41 – 0.68) 1.01	(0.39 – 0.66) 0.98	(0.43 – 0.72) 1.01	(0.41 – 0.69) 0.99
Mother's joint decisions (0 – 4)	(0.95 – 1.10) 0.98	(0.91 – 1.06) 0.93**	(0.93 – 1.09) 0.93**	(0.91 – 1.06) 0.94*	(0.93 – 1.09) 0.93**	(0.92 – 1.06) 0.94*
Cluster percent FGC	(0.93 – 1.03)	(0.89 – 0.98) 1.06***	(0.89 – 0.98) 1.06***	(0.89 – 1.00) 1.06***	(0.89 – 0.98) 1.04***	(0.89 – 1.00) 1.04***
Cluster average education, years		(1.05 – 1.07) 1.05**	(1.05 – 1.07) 1.05**	(1.05 – 1.07) 1.06**	(1.03 – 1.05) 1.05**	(1.03 – 1.05) 1.07**
Cluster average autonomous decisions		(1.01 – 1.08) 0.70*	(1.02 – 1.08) 0.70*	(1.02 – 1.11) 0.02***	(1.02 – 1.09) 0.02***	(1.02 – 1.12) 0.02***
Cluster average joint decisions			(0.54 – 0.93)	0.93	(0.00 – 0.07)	0.34***
Cluster percent FGC X Cluster average autonomous decisions				(0.81 – 1.07)	1.04***	(0.21 – 0.56)
Cluster percent FGC X Cluster average joint decisions					(1.03 – 1.06)	1.01***
Constant	0.05*** (0.03 – 0.08)	0.00*** (0.00 – 0.00)	0.00*** (0.00 – 0.00)	0.00*** (0.00 – 0.00)	0.00*** (0.00 – 0.01)	0.00*** (0.00 – 0.01)
Observations	12,144	12,144	12,144	12,144	12,144	12,144
Number of Clusters	2,524	2,524	2,524	2,524	2,524	2,524

*** p<0.001

** p<0.01

* p<0.05