Female Genital Mutilation in Rural Kurdistan-Iraq: A cross-sectional study

Running Head: Female Genital Mutilation in Kurdistan

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Abstract

Objectives: The objective of this study was to determine the prevalence of female genital mutilation (FMG) and the attitudes of mothers, religious leaders (Mullahs), and community leaders (Mokhtars) towards FMG, in rural areas of Iraqi Kurdistan. [35 words]

Methods: In a cross-sectional, double-randomized study of rural areas in Iraqi Kurdistan, we used a semi-structured questionnaire to directly interview 1 657 mothers of 5 048 daughters, as well as 192 Mullahs and 386 Mokhtars. We sought information from mothers that included the level of their education, ages of their daughters, whether their daughters had experienced FGM, and their attitudes about FGM. [61 words]

Results: The prevalence of FGM among the 5 048 daughters was 46.8%. Of the 1 657 mothers, 565 (34.4%) supported FGM for their daughters in the future, although 825 (49.9%) were aware that it was illegal. Of the 192 Mullahs and 386 Mokhtars, 86 (54.1%) Mullahs and 339 (88.7%) Mokhtars supported abandoning the practice of FGM. The prevalence of maternal support of FGM in uneducated mothers was 1.45 times higher than in educated mothers (prevalence ratio [PR] ¼ 1.45; 95% confidence interval [CI], 1.22-1.72; P < .001), and in mothers with 9 years or less of education was 1.66 times higher than in mothers with more than 9 years of education (PR=1.66; 95% CI, 1.17-2.35; P <.003).

Conclusions: FGM continues to be prevalent in rural areas of Iraqi Kurdistan. The prevalence of mothers supporting FGM for their daughters was significantly higher for those with lower levels of education. Public health interventions in this region are needed to improve knowledge about the harmful effects of FGM, its illegality, and the importance of prevention, particularly targeting leaders and households with low levels of education. [64 words]

Introduction

Female genital mutilation (FGM), also known as female genital cutting and female circumcision, is defined as a non-therapeutic procedure involving the partial or complete removal of some or all of the external female genitalia. In 1994, at the 47th World Health Assembly of the World Health Organization (WHO) declared that FGM was a violation of the human rights of women and girls.[1]

FGM is a deeply rooted cultural tradition that is practiced in more than 28 African countries and a number of countries in Asia and the Middle East, including Egypt,[2] Ghana,[3] Somalia,[4] and Iraq.[5] According to estimates by United Nations agencies, 200 million girls and women globally have undergone FGM, and approximately 3 million girls are at a risk of experiencing FGM each year. The United Nations Children's Fund (UNICEF) has reported prevalence rates among females aged 15 years to 49 years in different countries, with the estimated prevalence ranging from 0.6% in Uganda in 2006 to 97.9% in Somalia in 2005.[6] A number of serious health consequences for females are associated with FGM, including sepsis, shock, pain, urinary tract infections, mental health disorders, sexual issues, obstetric complications, and death as a result of hemorrhage.[7-11]

For more than a decade, women's organizations and local and international non-governmental organizations (NGOs) have raised concerns about the common practice of FGM involving girls in Iraqi Kurdistan. In 2011, the Kurdistan Parliament criminalized all forms of FGM (Law No. 8: the Law Against Domestic Violence in the Kurdistan Region of Iraq).[15] Furthermore, local authorities, including the Ministry of Health, have organized community awareness programs to highlight the adverse health outcomes associated with FGM and encourage the abandonment of the practice. However, several studies have demonstrated that FGM continues to be performed frequently within Muslim communities in the region.[9,13,14]

Few studies have attempted to estimate the prevalence of FGM in Iraq. A 2013 study by Yasin et al surveyed Muslim women recruited from urban primary health care centers and the Maternity Teaching Hospital in Erbil city and found that 70.3% of women reported having experienced FGM.[9] In this same study, clinicians who performed genital examinations of women reported that 58.6% had evidence of FGM. Another 2013 study by Saleem et al reported that 23.1% of Muslim females aged 6 months to 20 years, who were recruited from

primary health care centers in urban areas in 3 governorates of Iraqi Kurdistan, had experienced FGM.[14]

These studies of FGM in the urban areas of Iraqi Kurdistan are noteworthy. However, we are unaware of any studies that have examined FGM solely in the rural areas of Iraqi Kurdistan. Our objective was to perform a cross-sectional study to determine the prevalence of FGM among females living in rural areas of Iraqi Kurdistan. As part of this process, we were interested in using random sampling, obtaining data at the household level, and assessing the attitudes towards FGM of both mothers and village community and religious leaders. Because we hypothesized that the prevalence of FMG might vary by the level of household education, we also compared FMG prevalence for different levels of maternal education.

Methods

Iraqi Kurdistan has a total of 4 governorates or provinces (Duhok, Erbil, Sulaymaniyah, and Halabja) that are further divided into districts, which are comprised of villages and cities. It is a semi-autonomous region in the northeastern part of Iraq, and it is inhabited by approximately 5.8 million people.[9] The population consists mainly of Muslims of Kurdish ethnicity (Kurds), but also ethnic minorities including Turkmen, Chaldeans, Arabs, and religious minorities including Christians and Yezidis.[12]

The majority of the people of Kurdistan live in the 3 cities of Erbil, Duhok, and Sulaymaniyah (also sometimes called Sulaiymaniy), which are located within the governorates of the same names. Most people in these areas are employed by either the government, the construction industry, or the private business sector.[16] According to the Kurdistan Region Statistics Office, the estimated populations of the governorates in the Kurdistan Region in 2017 were 1 511 585 in Duhok, 2 113 391 in Erbil, 2 021 175 in Sulaymaniyah, and 108 619 in Halabja (**Figure 1**).[17]

Each village within these areas typically has a religious leader (Mullah) and a cultural leader (Mokhtar). A Mullah is a Muslim man who is trained in religious law and doctrine, who holds an official post, and who receives a government salary. Mullahs manage the Mosques in the Kurdistan region. They provide religious guidance and deliver religious teaching every Friday. Because of government funding shortages, some villages in Iraqi Kurdistan do not have a Mullah. A Mokhtar (also called a Mukhtar) plays more of a cultural

role and does not receive a government salary. Mokhtars represent the community on public issues, act as a link between local residents and the Government, and assist residents with solving family and community issues.

Study Design and Sampling

We undertook this study in the rural areas of 3 of the 4 governorates of the Kurdistan Region of Iraq: Duhok, Erbil, and Sulaymaniyah. In Sulaymaniyah, we confined our work to Raparin, a semi-autonomous district within the province. Because of funding constraints, we did not include the Halabja governorate in the study.

We conducted the study between February 19 and July 31, 2017. Our intent was to survey the Muslim mothers of female children, as well as the village Mullahs and Mokhtars. We began by obtaining a random sample of rural villages in the 3 governorates, and then from each of these we obtained a random sample of households.

First, we acquired a list of village names and their characteristics from the executive department of the administration of each of the governorates. Then, we coded the name of every village in each governorate entered this into the SPSS statistical software package. Next, we used the software to generate a simple random sample of villages. If a village was selected in the randomization process that contained a majority Yezidi or Christian population, we excluded it from the study and used random sampling to replace it with another village with a majority Muslim population. Christians and Yezidis in Iraqi Kurdistan are members of minority religions, and we excluded them from this study because they do not practice FGM.[14]

We randomly selected 10% of the total number of villages for this study. Of the total 386 villages that were selected, 161 (43%) were in Erbil, 125 (32%) were in Duhok, and 100 (25%) were in Raparin. These percentages were roughly in line with the relative 2017 estimated populations of the 3 governorates. However, the number of villages selected from Sulaymaniyah was relatively low, consistent with our decision to confine our work in that governorate to Raparin.

We subsequently obtained a list of family names from the Mokhtar in each of the identified villages. We coded the name of each family as a household. We then created a random sample of households in each village using SPSS, selecting 20% of the households in

each village for the study. Ultimately, through this double randomization process, we selected a total of 1 657 mothers who had 5 048 female children for the study. We included all female daughters of the selected mothers, irrespective of their ages. This included 748 mothers and their 2 183 daughters in Erbil, 514 mothers and their 1 832 daughters in Duhok, and 395 mothers and their 1 033 daughters in Raparin. The mothers were both married and unmarried, and Muslim Kurdish and Arabic mothers were included.

We also invited the Mullahs and Mokhtars from each of the selected villages to participate in the study. The Mokhtars, who lived in the 386 villages, all elected to participate. All villages did not have Mullahs, and some villages had Mullahs who did not live in the villages and so were unavailable for the study. Ultimately, 386 Mokhtars and 192 Mullahs were included in the study.

Data Collection Methods

The first 2 study authors were based in Duhok and collected the data there. The study authors trained a team of 3 people to collect the data in Erbil and Raparin. The mothers were interviewed using a survey tool, and the Mullahs and Mokhtars were interviewed using a different survey tool. The survey tools were pre-designed, semi-structured, interviewer-administered questionnaires.

The questions that we asked mothers were based on those already described in the literature.[9,14] From each mother, we sought information about the level and duration of their education, ages of their daughters, and whether their daughters had experienced FGM. We did not seek information about the type of FGM experienced by daughters, because the types of FGM differed depending upon who did the procedure, and because mothers were unlikely to know. We asked mothers whether they would support FGM for their daughters in the future, whether they supported community education and awareness programs on FGM prevention in their villages, whether they were aware that FGM had been made illegal by the Kurdistan Parliament, and where they received information about this. Responses to each of these questions were scaled as binary, either yes or no.

Mullahs and Mokhtars were asked whether they believed that religion supported FGM, whether they supported programs to prevent FGM in their villages, and whether they supported the abandonment of FGM. Responses to each of these questions were also scaled as binary, either yes or no.

Statistical Methods

We calculated medians and standard deviations (SD) for the ages of all daughters, those who experienced FGM, and those who did not experience FGM. We determined the frequencies of FGM by province and by age group for the following 3 subpopulations: all daughters, daughters who experienced FGM, and daughters who did not experience FGM. For each of the 3 subpopulations, we calculated prevalence by province and age group, by dividing the number of daughters in each province and age group by the total number of daughters in each subpopulation. We determined differences in the prevalence of experiencing FGM and not experiencing FGM among the 3 provinces and the 9 age groups using the Chi-Square test. We determined frequencies and percentages for maternal education levels and information sources, and for attitudes towards FGM of mothers, Mullahs, and Mokhtars.

We determined the frequencies of mothers supporting FGM for daughters in the future in the following 4 maternal groups: education level (educated, uneducated) and education duration (up to 9 years of education and more than 9 years of education). We defined educated as having attended primary school or beyond and uneducated as never having attended school. We also calculated the prevalence of maternal support of FGM for daughters in the future in the same 4 maternal groups. We then determined differences in prevalence of supporting and not supporting FGM among the different education level and education duration groups using the Chi-Square test.

We calculated Prevalence Ratios (with 95% confidence intervals [CI]) for mothers supporting FGM for daughters in the future, between educated and uneducated mothers, and between mothers with up to 9 years of education and mothers with 9 or more years of education. Prevalence Ratio was calculated by dividing prevalence in the uneducated (or up to 9 years of education) group by the prevalence in the educated (or more than 9 years of education) group.

We considered a *P* value of less than 0.05 as statistically significant. The Statistical Package for Social Sciences (SPSS, version 24) was used for all statistical analyses. Using an estimated overall FGM prevalence among daughters of 62.5%, we calculated that a sample size of 4810 females would be necessary to achieve an actual power of 0.95, using G*Power 3.1.9 statistical software. We increased the sample size to compensate for the possibility of a low response rate.

Ethical Considerations

We obtained administrative approval for this study from the Board of Relief and Humanitarian Affairs (BRHA) in the Duhok governorate, the Organizations Department in the Erbil governorate, and the semi-autonomous administration of the Raparin district within the Sulaymaniyah governorate. We explained the purpose of the study to all mothers, Mullahs, and Mokhtars during information sessions and prior to obtaining their consent to participate in the study, collect their data, and publish the results. All participation was voluntary. We guaranteed the confidentiality of personal information, which was de-identified using a numerical coding system. Language was not an issue in our study, as the participants and interviewers were all fluent Kurdish speakers living in the Kurdistan Region.

Results

Of the 1680 households that we selected for the study, 1657 mothers agreed to participate, yielding a response rate of 98.6%. The total number of daughters of these mothers was 5048 and their median age was 21.0 (SD, 23.0; range, 0.5 to 85.0) years. The median age of daughters who had experienced FGM (26.0 [SD, 20.0; range, 1.0 to 83.0)] years) was significantly higher than that for daughters who had not (17.0 [SD, 22.0; range 0.5 to 85.0] years) ($P < .001$).

Prevalence of FGM

Mothers reported that of the 5048 daughters, 2361 (46.8%) had experienced FGM (**Table 1**). The prevalence of daughters who had experienced FGM was lowest in the Duhok governorate (48 of 1832 daughters, 2.6%) and highest in Erbil (1503 of 2183 daughters, 68.9%) and Raparin (810 of 1033 daughters, 78.4%). Across the age groups in the sample, the proportion of daughters who had experienced FGM increased for each group until the age of 40 years. The proportion of daughters who had experienced FGM was higher than the proportion who had not in all age groups, except in the under 15 year old and the 15 to 19 year old groups.

Maternal Education Levels, Information Sources, and Attitudes towards FGM

Of the 1 657 mothers included in the study, most were either illiterate (653, 39.6%) or had only basic reading and writing skills without having attended school (535, 32.4%) (**Table 2**).

Of all mothers, 565 (34.4%) supported FGM for their daughters in the future, yet 1560 (94.1%) agreed with having FMG-prevention programs in their villages. Moreover, 825 (49.9%) were aware that FGM had been made illegal by the Kurdistan Parliament, and the majority of the 259 mothers identifying a source for this information indicated that they had obtained it through the television (199, 76.8%).

Attitudes of Mullahs and Mokhtars towards FGM

Of the 192 Mullahs and 386 Mokhtars, 108 (56.5%) Mullahs and 249 (64.5%) Mokhtars believed that religion supported the practice of FGM (**Table 3**). However, 136 (70.8%) Mullahs and 362 (94.5%) Mokhtars supported Non-Government Organization and government programs to prevent FGM, and 86 (54.1%) Mullahs and 339 (88.7%) Mokhtars supported abandoning the practice of FGM.

Association of Maternal Education Levels with FGM

Maternal lack of education was significantly associated with maternal support of FGM for their daughters in the future (Table 4). The prevalence of mothers supporting FGM for daughters in the future was significantly higher for uneducated mothers (37.7%) than for educated mothers (26.0%) ($P < .001$) and significantly higher for mothers with <9 years of education (35.4%) than for mothers with >9 years of education (21.3%) ($P < .003$).

Discussion

We observed a self-reported prevalence of FGM of 46.8% among Kurdish Muslim females of all ages in rural areas of Iraqi Kurdistan. This rural prevalence is lower than that reported by Yasin et al in an urban area, Erbil city, where the prevalence of FGM was 70.3% for females aged 15 years to 49 years.[9] However, it is higher than that reported by the Association for Crisis Assistance and Solidarity Development Cooperation (WADI), which used a non-randomized study in both urban and rural areas of Kirkuk governorate, and found the prevalence of FGM to be 38.2% of females aged 14 years and older.[13] Similarly, in a study of both rural and urban areas in Duhok, Erbil, and Sulaymaniyah governorates, Saleem et al reported that the prevalence of FGM was 23%, although this was only among females up to 20 years old.[14] They reported that the prevalence of FGM in different governorates was 5.2% in Duhok, 53.4% in Erbil, and 41.4% in Sulaymaniyah. Our study found that the prevalence of FGM was 2.6% in Duhok, 68.9% in Erbil, and 78.4% in Sulaymaniyah (Raparin). Our findings appear to contrast with claims that greater numbers of females have experienced

FMG in rural areas compared to urban areas because of the higher rates of poverty, illiteracy, and conservative religious practices that exist in those rural areas.[13,18]

Consistent with others studies of FGM in Iraqi Kurdistan, we found the lowest prevalence of FGM in the Duhok governorate. As has been the case in previous studies, we were unable to draw definitive conclusions when comparing the different governorates, because the populations in each governorate were not matched by age group, ethnicity, education, and other demographic factors. However, the finding of such a low prevalence of FGM in Duhok is intriguing, particularly given that the communities that we studied in Duhok and the other governorates tended to have the same religions and cultures. This suggests that additional study of FGM in this particular governorate may be potentially valuable.

In our study, more than one-third (34.4%) of the mothers stated that they supported FGM for their daughters, and the prevalence of having this attitude was between 1.45 and 1.66 times higher for mothers having lower levels of education. These findings agree with other studies in which the daughters of mothers with lower levels education were found to be more likely to have had FGM compared to daughters of mothers with higher levels of education.[19] For example, both Yasin et al (OR=1.4, $P < .001$) and Saleem et al (OR=8.0, $P < .001$) reported that the daughters of poorly educated mothers were more likely to have experienced FGM in comparison to daughters of mothers who were more highly educated.[9,14]

However, it may not be just mothers who influence whether daughters experience FGM or not. Although we did not investigate who in the households actually made the decisions concerning FGM, one study of women in the Kirkuk governorate of Iraq reported that for 77.8% of those experiencing FGM, male relatives (ie, fathers, brothers) made the decision to have their female family members undergo FGM.[20] Furthermore, in a survey by WADI in Iraqi Kurdistan, 67.2% of women reported that FGM would be abandoned if male relatives made the decision to discontinue the practice.[13] These findings suggest the importance of getting both men and women in each community engaged in discussions about FGM prevention and in related health education activities in Kurdistan.[21]

Community and religious leaders may also play an important role in the decision-making regarding FGM. While we found that the majority of leaders (Mullahs and Mokhtars) considered FGM to be a religious practice, we did not delve more deeply into the reasons

why FGM is still practiced among the Kurdish Muslim population. However, a 2018 qualitative study of the attitudes of 29 local religious leaders in the Erbil governorate found that these leaders regarded FGM as both a religious requirement and an imbedded component of Kurdish culture.[22] These religious leaders suggested that reasons for performing FGM included to regulate or reduce female sexual desire, prevent adultery and extramarital sexual relations, enhance female hygiene, and augment male sexual pleasure. Other studies have also affirmed the association between FGM and cultural tradition, focusing on the role of FGM in female marriageability and as a form of religious practice.[9,13]

Despite these attitudes, a positive aspect of our study was the finding that the majority of both Mullahs and Mokhtars in the urban areas of these 3 governorates supported the abandonment of FGM as well as programs to prevent FGM in their villages. This contrasts with the study from Ahmed et al, in which the majority of religious leaders in Erbil still supported FGM and did not support a law banning FGM.[22] However, the leaders in that study did acknowledge that excessive removal of the female genitalia often led to marital problems and adverse health outcomes for women. They noted that although they did not consider that they should be the primary source of advice about the practice of FGM, they were often consulted when FMG resulted in adverse effects or related problems.

Indeed, community and religious leaders can play an important part in the prevention of FGM, by acting as agents of change and role models. The Tostan project in Somalia has demonstrated that changes in behavior and attitudes about FGM can occur by engaging leaders with community members in discussions about abandoning FGM, and by involving leaders in the selection of key community champions to participate in FGM-prevention health education classes.[23] Religious leaders have also been involved in FGM prevention efforts in Ethiopia and Kenya, where their effectiveness to bring about behavioral and attitudinal change concerning FGM seems to have been related to the level of trust that communities had in them.[24,25]

Our results suggest that television can be a useful way to raise awareness of issues pertaining to FGM. We found that television was the main source of information about FGM and laws pertaining to it in Duhok, Erbil, and Raparin. These results are similar to those reported by WADI in the Kirkuk governorate, where 51.7% of participants reported receiving information about FGM from television.[13] Social marketing campaigns delivered through television could be a way to more broadly publicize the adverse impact of FGM on women

and their communities, the fact that FGM is illegal, and the need to prevent the practice in the future. On a related note, a number of non-governmental and local women's rights organizations have launched campaigns in Kurdistan, like "Stop FGM in Kurdistan", which have likely played an important role in the criminalization of FGM.[13,26] However, even more attention must be given to the issue of FGM in order to maintain this positive momentum.

Limitations

Although this study is the largest randomized investigation of FMG in rural regions of Iraqi Kurdistan, it is not without some limitations. First, we used maternal reporting to capture most of the data. The information we received may have been influenced by mothers having different levels of understanding of the practice of FGM. In addition, FGM may have been under-reported by mothers, because of the sensitive and illegal nature of the practice.[27] Second, we did not obtain data about several important topics. It may have been informative to ask about the type of FGM that each daughter had; however, mothers may not have known enough about the details of the practice or of the specific procedure performed on their daughters to provide meaningful answers. Other valuable information that we could have asked about included age at which the daughters experienced FGM and who made the decision that daughters would undergo FGM. Third, as with any cross-sectional study, ours did not provide insight into the incidence of FGM. An analysis of incidence would certainly be helpful in more definitively determining whether the frequency of the practice is changing. However, our study was otherwise rigorous, involving a large sample size and multistaged random sampling, and providing more robust FMG prevalence results for this region than had been reported in previous studies.[9,14]

Conclusions

FGM continues to be prevalent in some rural areas of Iraqi Kurdistan, particularly in the Erbil and Sulaymaniyah (Raparin) governorates. The prevalence of mothers supporting FGM for their daughters was significantly higher for those having lower levels of education. Religious and community leaders and men also play a strong role in decisions regarding FGM. Public health interventions in this region are needed to improve knowledge about the harmful effects of FGM, its illegality, and the importance of prevention, particularly targeting leaders and households with low levels of education.

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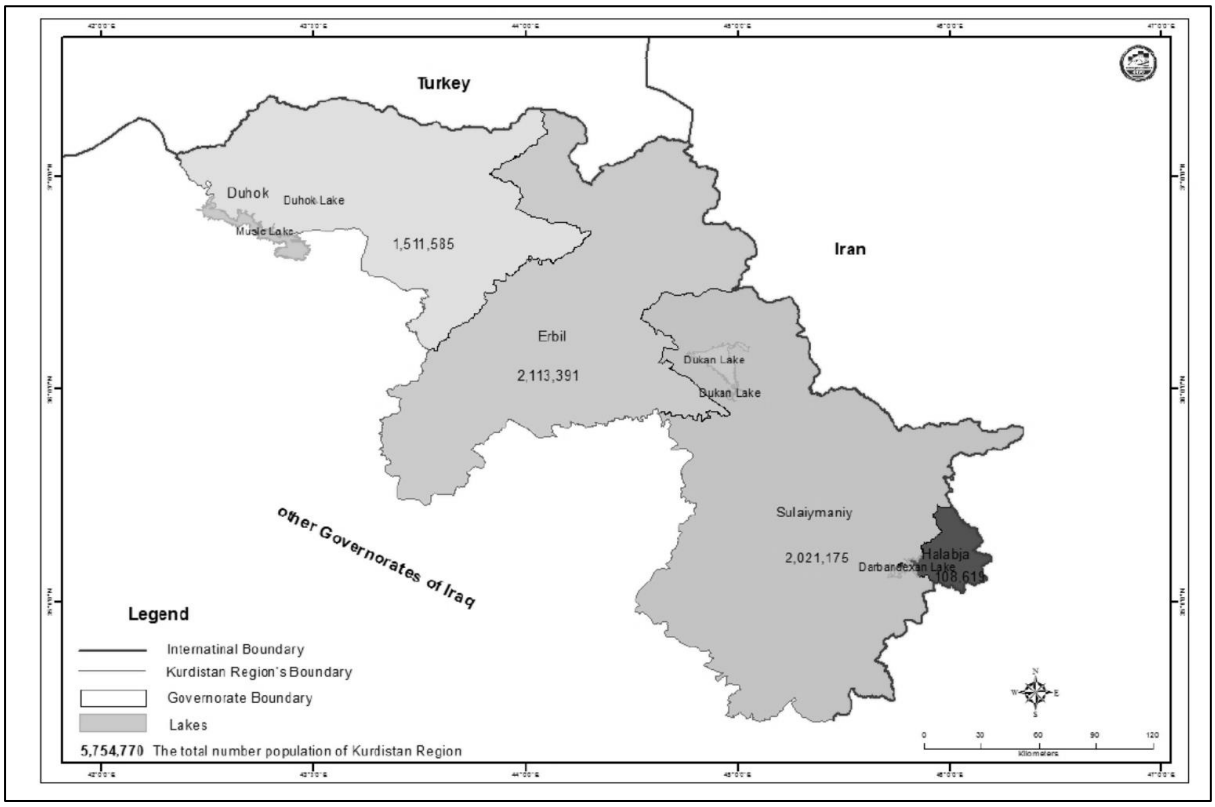

Figure 1. Map and estimated population of the Kurdistan Region of Iraq, including the 3 governorates included in this study: Duhok, Erbil, and Sulaymaniyah, 2017. The Halabja governorate was not included in this study, because of funding constraints. Iraq consists of 19 governorates (also called provinces).

Table 1. Prevalence of female genital mutilation (FMG)[a] among 5 048 daughters in rural areas of the Duhok, Erbil, and Sulaymaniyah governorates[b], by governorate of residence and age group, Kurdistan Region of Iraq, February 19 through July 31, 2017

Population Characteristics	**Total** N (%)	**Female Genital Mutilation (FGM) Status**		***P* Value**
		Prevalence FMG n (% of N)[e]	**Prevalence No FMG** n (% of N)[e]	
All Females	5048 (100.0)	2361 (46.8)	2687 (53.2)	
Governorate of Residence				<.001
Duhok	1832 (36.3)	48 (2.6)	1784 (97.4)	
Erbil	2183 (43.2)	1503 (68.9)	680 (31.1)	
Sulaymaniyah (Raparin)[c]	1033 (20.5)	810 (78.4)	223 (21.6)	
Age[d] Group, *years*				<.001
Under 15	1582 (31.4)	451 (28.5)	1131 (71.5)	
15-19	693 (13.8)	337 (48.6)	356 (51.4)	
20-24	577 (11.4)	300 (52.0)	277 (48.0)	
25-29	488 (9.7)	264 (54.1)	224 (45.9)	
30-34	438 (8.7)	268 (61.2)	170 (38.8)	
35-39	340 (6.7)	222 (65.3)	118 (34.7)	
40-44	310 (6.2)	165 (53.2)	145 (46.8)	
45-49	202 (4.0)	126 (62.4)	76 (37.6)	
50 and older	410 (8.1)	226 (55.1)	184 (44.9)	

[a] Female genital mutilation (FGM), also known as female genital cutting and female circumcision, is defined as a non-therapeutic procedure involving the partial or complete removal of some or all of the external female genitalia.

[b] The Kurdistan Region of Iraq consists of the Duhok, Erbil, Sulaymaniyah, and Halabja governorates (provinces). The Halabja governorate was not included in this study, because of funding constraints.

[c] In the Sulaymaniyah governorate, the study was confined to Raparin, a semi-autonomous district.

[d] Median (standard deviation) age of all females was 21.0 (23.0) years, of females who experienced FMG was 26.0 (20.0; range, 1.0-83.0) years, and of females who had not experienced FMG was 17.0 (22.0; range, 0.5-85.0) years ($P < .001$).

[e] Prevalence was calculated by dividing the number of females who had experienced FMG or who had not experienced FMG by the total number of females in each governorate or age group.

Table 2. Educational levels, information sources, and attitudes towards Female Genital Mutilation (FGM)[a] of 1 657 mothers of females in rural areas of the Duhok, Erbil, and Sulaymaniyah governorates[b], Kurdistan Region of Iraq, February 19 through July 31, 2017

	Mothers of Females	
Maternal Characteristics	N	%
Education Level		
Illiterate	653	39.6
Read & write	535	32.4
Primary school	209	12.7
Intermediate school	133	8.0
High school	86	5.2
Institute	32	1.9
College	3	0.2
Source of information about FGM and the law		
Non-governmental organization teams	45	17.4
Television	199	76.8
Radio	7	2.7
Newspaper	2	0.8
Members of the public	6	2.3
Support FGM for daughters in future	565	34.4
Support FGM-prevention programs in villages	1560	94.4
Aware that FGM made illegal	825	49.9

[a] Female genital mutilation (FGM), also known as female genital cutting and female circumcision, is defined as a non-therapeutic procedure involving the partial or complete removal of some or all of the external female genitalia.

[b] The Kurdistan Region of Iraq consists of the Duhok, Erbil, Sulaymaniyah, and Halabja governorates (provinces). The Halabja governorate was not included in this study, because of funding constraints. In the Sulaymaniyah governorate, the study was confined to Raparin, a semi-autonomous district.

Table 3. Attitudes towards Female Genital Mutilation (FGM)[a] of 192 Mullahs and 386 Mokhtars[b] in rural areas of the Duhok, Erbil, and Sulaymaniyah governorates[c], Kurdistan Region of Iraq, February 19 through July 31, 2017

	Mullahs		Mokhtars	
Attitudes	N	%	N	%
Believe religion supports FGM	108	56.5	249	64.5
Support programs to prevent FGM	136	70.8	362	94.5
Support abandonment of FGM	86	54.1	339	88.7

[a] Female genital mutilation (FGM), also known as female genital cutting and female circumcision, is defined as a non-therapeutic procedure involving the partial or complete removal of some or all of the external female genitalia.

[b] Each village has a cultural leader (Mokhtar). Some villages also have a religious leader (Mullah), though some do not because of government funding shortages.

[c] The Kurdistan Region of Iraq consists of the Duhok, Erbil, Sulaymaniyah, and Halabja governorates (provinces). The Halabja governorate was not included in this study, because of funding constraints. In the Sulaymaniyah governorate, the study was confined to Raparin, a semi-autonomous district.

Table 4. Association between level and duration of maternal education and attitudes towards Female Genital Mutilation (FGM)[a] of 1 657 mothers of females in rural areas of the Duhok, Erbil, and Sulaymaniyah governorates[b], Kurdistan Region of Iraq, February 19 through July 31, 2017

Maternal Educational Characteristics	**Mothers supporting FGM for daughters in future**		***P* Value**	**Prevalence Ratio[d] (95% CI)**
	Yes N (%)	**No** N (%)		
Education Level[c]			< .001	1.45 (1.22-1.72)
Uneducated	445 (37.7)	736 (62.3)		
Educated	120 (26.0)	342 (74.0)		
Duration of Education			.003	1.66 (1.17-2.35)
9 years or Less	539 (35.4)	982 (64.6)		
More than 9 years	26 (21.3)	96 (78.7)		

[a] Female genital mutilation (FGM), also known as female genital cutting and female circumcision, is defined as a non-therapeutic procedure involving the partial or complete removal of some or all of the external female genitalia.

[b] The Kurdistan Region of Iraq consists of the Duhok, Erbil, Sulaymaniyah, and Halabja governorates (provinces). The Halabja governorate was not included in this study, because of funding constraints. In the Sulaymaniyah governorate, the study was confined to Raparin, a semi-autonomous district.

[c] Uneducated defined as never having attended school. Educated defined as having attended primary school or beyond.

[d] Prevalence ratio (PR) was calculated by dividing the prevalence in the uneducated and 9 years or less groups by the prevalence in the educated and more than 9 years groups, respectively.