

The impact of health education on attitudes of parents and religious leaders towards female genital mutilation

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Received 23 August 2018

Revised 25 September 2019

Accepted 29 September 2019

Published Online First

24 October 2019



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To cite: Abdulah DM, Dawson A, Sedo BA. *BMJ Sex Reprod Health* 2020;**46**:51–58.

ABSTRACT

Background Previous studies conducted in Iraqi Kurdistan have reported that parent's decisions to circumcise their daughters are based on religious or cultural beliefs. Despite the widespread practice of female genital mutilation (FGM), the effectiveness of educational strategies to change attitudes towards FGM has not been examined in this region. The present investigation examined the effectiveness of a short-term educational intervention to change the attitudes of parents and religious leaders towards FGM.

Methods 192 Mullahs (religious leaders), 212 Mokhtars (traditional leaders) and 523 parents in rural areas in Iraqi Kurdistan were invited to participate in a pre- and post-test community-based interventional study in 2017. The Health Belief Model informed the intervention, and participants' attitudes were compared across two stages of the study.

Results The attitudes of Mullahs, Mokhtars and parents substantially changed from a position of supporting female circumcision to expressing a wish to abandon the practice and not cut their future daughters (OR 1.57, 95% CI 1.02 to 2.42; OR 1.99, 95% CI 1.3 to 3.04 and OR 0.13, 95% CI 0.09 to 0.18, respectively).

Conclusions The present study suggests that brief educational interventions can be an effective strategy for changing the attitudes of parents and public leaders towards FGM. Health education is a useful strategy for changing attitudes. However, such interventions must be delivered alongside other strategies to ensure a multifaceted approach to addressing complex social dynamics. A comprehensive public health approach is, therefore, necessary that includes legal measures, community-based action and an appropriate health system approach.

Key messages

- ▶ Brief educational interventions can be an effective strategy for changing the attitudes of parents and public leaders towards female genital mutilation (FGM).
- ▶ Men must be involved in health educational interventions to changes attitudes towards FGM.

INTRODUCTION

The World Health Organization (WHO) defines female genital mutilation (FGM) as the total or partial removal of the external female genitalia, or procedures such as pricking, scarring or burning for non-therapeutic purposes. The prevalence of FGM in Iraqi Kurdistan has concerned the Kurdistan Regional Government (KRG), health organisations and non-governmental organisations (NGOs) for the last decade.¹

FGM is a global issue, is performed on girls as young as 2 months, and has been described as a human rights violation.¹ It is practised in Africa, Asia and the Middle East,² as well as by migrants from these regions to high-income countries.³ FGM affects 100–140 million women worldwide, and 3 million girls are at risk each year.⁴

FGM is associated with adverse health consequences depending on the type and the conditions in which it is performed.⁵ Health consequences include chronic pain, urination difficulties, recurrent urinary tract infections, obstetric complications, sexual and psychological problems, and death resulting from haemorrhage.^{5 6}

Iraqi Kurdistan is a federal region inside Iraq with a population of approximately 4 million people, the majority of whom are Kurdish. In this region, Islam is the

main religion followed by minority ethnic and religious groups including Turkmens, Arab, Yazidis and Christians.⁷

Local NGOs, women's activists and international human rights organisations have raised concerns about the high prevalence of FGM in Iraqi Kurdistan for more than a decade.

Self-reported and clinical prevalence rates of FGM in Erbil city among women aged 15–49 years have been reported⁶ as 73.3%, and 58.6%, respectively. A lower overall prevalence rate of 23% was reported among females aged 6 months to 20 years old⁷ in three provinces of Iraqi Kurdistan. WADI, the Association for Crisis Assistance and Development Cooperation, a German NGO, has reported an overall prevalence of 38.2% among females aged 14 years and older in the Kirkuk Governorate.⁸

The Kurdistan Parliament passed the Family Violence Law, criminalising FGM in 2011, but FGM continues to be practised.⁹ The UN Assistance Mission in Iraq (UNAMI) undertook a survey of 5990 mothers of girls aged 4 to 14 years in partnership with the KRG, High Council of Women Affairs, the KRG Ministry of Planning, and the United Nations Children's Fund (UNICEF) during the period 2015–2016 and reported a prevalence of 44.5%.¹⁰

The 2016 UNAMI report identified girls and women to be at a high level of risk of exposure to violence and discrimination including physical abuse, honour-based killings, FGM, self-immolation, and sexual violence and harassment. The report calls on local authorities to undertake action to improve the human rights of women and girls and prevent gender-based violence including FGM.¹¹

Previous studies conducted in Iraqi Kurdistan have reported cultural and/or religious reasons as the main drivers for the continuation of FGM;^{6–8} therefore, parents, religious leaders and village Mokhtars are likely to play a key role in the abandonment of the practice.

There is no research concerning the effectiveness of strategies to prevent FGM in Iraqi Kurdistan. This study aimed to evaluate the effectiveness of a short-term education strategy on the attitudes of Mullahs (religious leaders in Islam), Mokhtars (traditional leaders in the Kurdish culture) and parents (mothers or fathers of married or single females of undetermined FGM status) towards the practice of FGM in rural areas of three governorates in Iraqi Kurdistan. We expected the positive attitudes of the participants towards the FGM practice to decrease in the post-intervention stage following educational sessions compared with the pre-intervention stage.

METHODS

Study design and sampling

The parents, either the mother or father, of married or single females (of undetermined FGM status), and village Mullahs and Mokhtars were invited to partake

in a pre- and post-test interventional study. The participants, regardless of their age and other sociodemographic factors, participated in three sessions of an FGM educational intervention between 19 February 2017 and 31 July 2017. Those who did not wish to participate, or did not attend at least two sessions of the education project, were excluded from the study. Only Muslims were included in this study, as Christians and Yazidis in Iraqi Kurdistan do not practise FGM in accordance with previous research.⁷

Sampling was undertaken in two steps. First, a list of all residential villages in Iraqi Kurdistan, including Duhok, Erbil and Raparin (a semi-autonomous province), was provided by the provincial governments, consecutively numbered and entered into the statistical software package SPSS. Of the total number of 3680 villages across the three provinces, a random sample of 220 Muslim villages was identified for recruitment into the study by generating a list of simple random numbers using SPSS. All Mullahs and Mokhtars in the selected villages were invited to participate in the study. All included villages had one religious leader and one traditional leader.

Of the 202 Mullahs, four did not accept the invitation to participate and six could not be reached at the time of the study (a response rate of 95.0%). One hundred and ninety-two Mullahs were recruited for the study. Of the 220 Mokhtars, three did not accept the invitation to participate and five Mokhtars could not be contacted (a response rate of 96.3%). Two hundred and twelve Mokhtars were recruited in the study.

Of the total 220 villages randomly selected for the study, the eligible parents in households were invited to participate in the sessions. At this step, 574 parents were included in the study through convenience sampling. A simple random sample of 574 parents was selected from the identified villages in the sampling second step generated by a computer.

Of the 574 parents, 27 chose not participate. Of the remaining 547 parents, eight participants did not attend the sessions, 13 were lost to followup and three parents did not attend all sessions (a response rate of 91.1%). Lastly, 523 parents, including 167 in Duhok, 232 in Erbil and 124 in Raparin provinces, were included in the study (Figure 1).

Educational intervention

The first author, a public health professional, in partnership with medical staff developed the education course according to the four principles of the Health Belief Model. These principles included (1) perceived susceptibility to the adverse effects of FGM as a serious health condition leaving long-term psychological, medical, somatic and personal issues, (2) perceived seriousness of the consequences of FGM and its long-term complications on the individual and society, (3) perceived benefits of specified actions to abandon FGM and (4) perceived barriers to taking action against

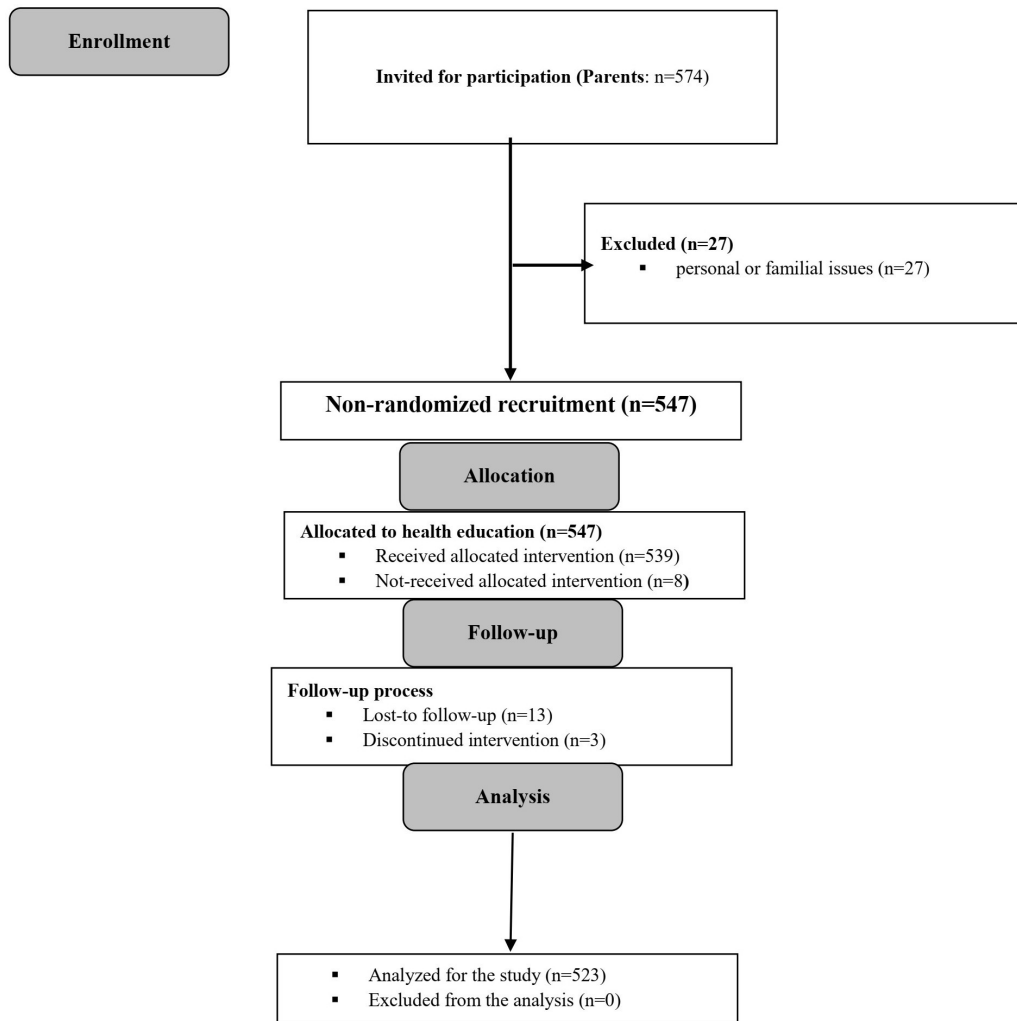


Figure 1 Flow chart of study participant recruitment

FGM in the community. The educational sessions comprised health talks, and visual materials in the local language, social media and discussion. The first author, three general practitioners, five nurses and community workers delivered the education programme in the local language in Duhok.

The study authors were unable to deliver the education programme in all provinces; therefore, the investigators trained teams of research assistants to deliver the questionnaire in Erbil and Raparin. The two teams comprised four general practitioners, eight nurses and 11 social workers. Two consecutive training sessions on the curriculum and delivery mode were held to ensure the education sessions were delivered in the same manner in all sites.

The three, 4-hour education sessions were provided to the participants at the Mokhtar's home in each village within a 1-week period with a 1-day interval between the sessions. The attitudes of the participants were assessed before the programme, on the first day and 4 weeks after the final session of the intervention.

Measurement criteria

Data were collected from the participants using an interviewer-administered questionnaire in the local language that was adapted from survey tools used in previous studies in the region.^{6 7 12} An interviewer administered the questionnaire to individuals at the Mokhtar's home individually. Participants were asked if they had received formal education (yes or no), if they knew if FGM was legal (yes or no), if they agreed with ending the practice (yes or no), if they agreed with supporting FGM abandonment efforts (yes or no), and their readiness to ask people to stop FGM (yes or no). The same questionnaire was delivered pre- and post-test.

Patient and public involvement statement

No patients were involved in this study.

Statistical methods

The study data were analysed using SPSS (version 23:00 IBM). McNemar's statistical test was used to establish the effectiveness of the education programme.

Table 1 Baseline characteristics of the parents of daughters

Parents' characteristics (n=523)	n	%
Age (years) (mean (SD))	50.18 (15–95)	22.42
Parents		
Mothers	378	72.3
Fathers	145	27.7
Education level		
Educated	139	26.6
Uneducated	384	73.4
Do you know that female circumcision is now illegal in Kurdistan?		
Yes	259	49.5
No	264	50.5
Source of FGM information		
NGO teams	45	17.4
TV	199	76.8
Radio	7	2.7
Newspaper	2	0.8
Public	6	2.3

FGM, female genital mutilation; NGO, non-governmental organisation.

Predictors of support for the abandonment of FGM for parents, Mullahs and Mokhtars were examined using a binary regression model. A level of less than 0.05 was considered to be statistically significant. The sample size required was estimated using software G*Power 3.3.19. Assuming an estimated OR of 3.25 for change in parent's attitudes, a two-tailed p value, and 10%

proportion of discordant pairs with McNemar test, a sample size of 440 people would have a power of 95%.

Ethical considerations

Ethical clearance was obtained from the Board of Relief and Humanitarian Affairs (BRHA) in the Duhok Governorate, the Organizations Department of the Erbil Governorate and the semi-autonomous Raparin administration in 2016. Participants were guaranteed that their personal information would remain confidential. The participants were not informed of the study purpose, but verbal consent was obtained for the interview and the publication of the study results.

RESULTS

The mean age of the parents was 50.18 (SD 22.42) years, ranging from 15 to 95 years, including 378 mothers and 145 fathers. The majority of parents were not formally educated (73.4%) and more than half (50.5%) were unaware that FGM is illegal in Kurdistan. Of the parents were who were aware of the law in relation to FGM, more than three-quarters (76.8%) had received information about the law from the television and from NGO staff (17.4%) (table 1).

The attitudes of village Mullahs and Mokhtars changed following the educational intervention from 37.5% to 72.4% and from 36.8% to 77.4% ($p<0.0001$), respectively. Similarly, a greater proportion of leaders were prepared to ask people to stop performing FGM after they had participated in the education programme from 38.0% to 74.0% for

Table 2 Difference in the attitudes of Mullahs, Mokhtars and parents towards female genital mutilation between the pre- and post-education intervention

Participants' attitudes	Baseline (n (%))	Follow-up (n (%))	Test of significance* (OR (95%CI))
Mullahs' attitudes (n=192)			
Do you support the abandonment of FGM?	72 (37.5)	139 (72.4)	1.57 (1.02 to 2.42)
Are you ready to ask people in mosque to stop practising FGM?	73 (38.0)	142 (74.0)	1.74 (1.13 to 2.69)
Mokhtars' attitudes (n=212)			
Do you support the abandonment of FGM?	78 (36.8)	164 (77.4)	1.99 (1.30 to 3.04)
Are you ready to ask people to stop FGM?	82 (38.7)	177 (83.5)	3.19 (2.02 to 5.03)
Parents' attitudes (Total=523)			
Do you wish for your future daughters to have FGM?	278 (53.2)	54 (10.3)	0.13 (0.09 to 0.18)
Do you think that education about FGM should be provided in your village?	184 (35.2)	490 (93.7)	8.06 (5.43 to 11.97)
Mothers' attitudes (n=378)			
Do you wish for your future daughters to have FGM?	171 (45.2)	36 (9.5)	0.09 (0.06 to 0.13)
Do you think that education about FGM should be provided in your village?	142 (37.6)	349 (92.3)	7.24 (4.70 to 11.16)
Fathers' attitudes (n=145)			
Do you wish for your future daughters to have FGM?	107 (73.8)	18 (12.4)	OR 0.40 (95% CI 0.22 to 0.74)
Do you think that education about FGM should be provided in your village?	42 (29.0)	141 (97.2)	OR 14.37 (95% CI 5.00 to 41.35)

*McNemar test was performed for statistical analysis.

FGM, female genital mutilation.

Table 3 Difference in attitudes of parents towards female genital mutilation between the pre- and post-education programme according to province

Participants' attitudes (n=523)	Baseline (n (%))	Follow-up (n (%))	Test of significance* (OR (95%CI))
Duhok (n=167)			
Do you wish for your future daughters to have FGM?	45 (26.9)	15 (9.0)	0.04 (0.02 to 0.07)
Do you think that education about FGM should be provided in your village	57 (34.1)	160 (95.8)	11.84 (5.21 to 26.94)
Erbil (n=232)			
Do you wish for your future daughters to have FGM?	136 (58.6)	19 (8.2)	0.12 (0.07 to 0.20)
Do you think that education about FGM should be provided in your village	92 (39.7)	217 (93.5)	9.51 (5.29 to 17.08)
Raparin (n=124)			
Do you wish for your future daughters to have FGM?	97 (78.2)	20 (16.1)	0.69 (0.36 to 1.31)
Do you think that education about FGM should be provided in your village	35 (28.2)	113 (91.1)	4.04 (1.94 to 8.4)

*McNemar test was performed for statistical analysis.

FGM, female genital mutilation.

Mullahs and from 38.7% to 83.4% for Mokhtars ($p<0.0001$) (table 2).

Table 2 shows that the percentage of families who indicated a readiness to continue the practice was reduced following the intervention (from 53.2% to 10.3%, $p<0.0001$). Similarly, the percentage of parents who indicated a willingness to support a programme of FGM abandonment increased from 35.2% to 93.7% ($p<0.0001$). Similar findings were found for mothers and fathers.

The difference in attitudes towards FGM in the three provinces is presented in table 3. The study found the lowest support for FGM in Duhok (26.9%) compared with 58.6% in Erbil and 78.2% in Raparin.

The attitudes of mothers and fathers towards FGM were examined in 10-year age categories in table 4. Mothers and fathers aged under 44 years were significantly more likely to have changed their attitudes towards FGM and less likely to support the practice.

However, older mothers and younger fathers indicated that they still supported FGM.

There was no association between parents' education and their intention to have FGM performed on their future daughters in mothers ($p=0.203$) and fathers ($p=0.602$) (table 5).

The predictors of parental, Mullah and Mokhtar support for FGM abandonment were examined in the binary regression model in table 6. The analysis showed that parents who had previously supported the abandonment of FGM were more likely to want to stop practising FGM ($p=0.028$). In addition, Mullahs in Raparin significantly supported the abandonment of FGM followed by Duhok and Erbil ($p=0.010$), While Mokhtars in Erbil were more likely to support the abandonment of FGM followed by Duhok and Raparin ($p=0.028$) and those Mokhtars who supported the abandonment of FGM ($p=0.004$).

Table 4 The change in parents' attitudes towards female genital mutilation according to age group between pre- and post-education intervention

Age group (years) (n=523)	Mothers (n (%))			Fathers (n (%))		
	Baseline	Follow-up	P value	Baseline	Follow-up	P value
15–24	29 (60.4)	3 (6.3)	<0.0001	16 (59.3)	3 (11.1)	<0.0001
25–34	31 (54.4)	5 (8.8)	<0.0001	27 (81.8)	7 (21.2)	<0.0001
35–44	18 (32.1)	1 (1.8)	<0.0001	14 (77.8)	2 (11.1)	<0.0001
45–54	26 (47.3)	6 (10.9)	<0.0001	10 (76.9)	0 (0.0)	n.a.
55–64	18 (41.9)	5 (11.6)	0.001	6 (66.7)	0 (0.0)	n.a.
65–74	20 (45.5)	6 (13.6)	0.001	16 (80.0)	3 (15.0)	<0.0001
75–84	10 (27.0)	6 (16.2)	0.424	13 (76.5)	3 (17.6)	0.002
85–95	19 (50.0)	4 (10.5)	<0.0001	5 (62.5)	0 (0.0)	n.a.

McNemar test was performed for statistical analyses.

The numbers and percentages of pre- and post-test are positive responses of the parents to the question (a total of 207 and 125 parents responded 'yes' to the question for pre- and post-intervention, respectively). The remaining participants responded 'no' to the question.

*The numbers are in frequency (percentage).

n.a., not applicable.

Table 5 The association of parents' education with their wish for female genital mutilation to be performed on their future daughters

Do you wish your future daughters to undergo FGM?	Education category (n (%))		OR (95% CI)
	Educated	Uneducated	
Mothers			0.58 (0.24 to 1.36)
Agree	7 (6.5)	29 (10.7)	
Disagree	101 (93.5)	241 (89.3)	
Fathers			0.71 (0.19 to 2.62)
Agree	3 (9.7)	15 (13.2)	
Disagree	28 (90.3)	99 (86.8)	

FGM, female genital mutilation.

DISCUSSION

Our study shows that health education can be a useful strategy for changing the attitudes of parents and community leaders towards FGM. The Mullahs and Mokhtars supported the abandonment of FGM. Moreover, there was an increase in the proportion of Mullahs and Mokhtars who were prepared to ask people to stop performing FGM after they had participated in the education programme. The percentage of families who indicated a readiness to continue the practice was significantly reduced following the intervention.

Other studies have also identified the effect of health education on FGM attitudes and future intentions. Research¹³ in a rural community in Nigeria reported that of the participants surveyed, those who regarded themselves as traditionalists (83.3%) (comprised of 65.2% Muslims and 49.4% Christians) were more likely to voice their intention to excise their future daughters in

the pre-intervention stage of the study. However, these proportions were reduced substantially to 20.6% and 16.7%, for Muslim and Christian parents, respectively, following a 10-day education intervention. Changes in attitudes towards FGM and future intentions as a result of health education were also noted in a study¹⁴ in Senegal. This study involved a pre- and post-test comparison group to evaluate the community education programme on women's willingness to abandon FGM in rural areas. The research found a substantial decrease in the prevalence of FGM among girls, aged 10 years and younger, over a week. The programme aimed to empower women using a range of health promotion activities among 20 villages.

Differences between fathers' and mothers' intentions to have FGM performed on their daughters have been noted before the implementation of health education

Table 6 Predictors of support of female genital mutilation abandonment in parents, Mullahs and Mokhtars

Dependent variable: Parents' support to abandon FGM after education					
Predictors (Parents)	B	SE	Significance	OR	95% CI for OR
Age of parent	−0.013	0.012	0.257	0.987	0.965 to 1.010
Interviewees	−0.580	0.562	0.303	0.560	0.186 to 1.686
Education categories	−0.507	0.668	0.448	0.602	0.163 to 2.230
Governorate*	0.202	0.443	0.649	1.224	0.514 to 2.914
Pre-agreement to perform FGM	1.508	0.684	0.028	4.516	1.181 to 17.271
Source of information	−0.510	0.283	0.072	0.601	0.345 to 1.046
Dependent variable: Mullahs' support to abandon FGM after education					
Predictors	B	SE	Significance	OR	95% CI for OR
Governorate*	−0.569	0.220	0.010	0.566	0.368 to 0.871
Relation with religion	−0.338	0.252	0.180	0.713	0.435 to 1.169
Pre-intervention readiness	0.289	0.269	0.281	1.336	0.789 to 2.261
Dependent variable: Mullahs' support to abandon FGM after education					
Predictors	B	SE	Sig.	OR	95% CI for OR
Governorate*	−0.362	0.164	0.028	0.696	0.505 to 0.961
Pre-intervention readiness	−0.552	0.190	0.004	0.576	0.397 to 0.836

A binary regression model was performed for statistical analysis.

The bold numbers indicate the predictors.

*Since there is a significant difference in the practice of FGM in each governorate in this region, we included it as a predictor in the regression analysis.

FGM, female genital mutilation.

programmes for parents. Asekun-Olarinmoye and Amusan¹³ found that men were significantly more willing to continue FGM compared with women (73.8% vs 45.2%, respectively). This is consistent with our study; however, we found that the attitudes of fathers and mothers changed in the post-intervention stage to indicate less support for the continuation of the practice. Nevertheless, men need to be included in all health education initiatives as they are the major decision-makers in traditional communities and may influence whether FGM is performed or not.

It is concerning that more than half of the participants did not know that the FGM is illegal in Iraqi Kurdistan. The majority of participants indicated that they became aware that FGM was illegal from the television, indicating that it is a key source of information. In other studies, radio was found to be an authoritative source of information on FGM for men and young people,^{14–16} while pictures in booklets have assisted community members in learning about FGM.¹⁷

Our study did not find an association between intention to continue FGM and the education levels of mothers and fathers. This contrasts with other research in Africa and in Iraqi Kurdistan.^{8 18 19} This finding may be the result of the limited number of parents with a college education (n=12 in our sample).

Although educational interventions have been shown to be associated with changes in the intentions of parents or religious leaders to have their daughters excised, attention must also be paid to changing the attitudes of traditional midwives who undertake FGM for a fee. Studies show the importance of providing health education for traditional excisors but also engaging them as educators and change agents to prevent FGM.^{13 20}

More than half of the parents post-intervention indicated that they would not have their daughters excised in the future only. This shows a need to scale-up health education for these groups, especially when as leaders they are influential in the decision-making of community members that may affect the future health status of girls in that community.

Limitations of the study

This study has some limitations. The results must be interpreted with caution as they are reliant on participant self-reports rather than objective measures. Attitudes were measured on a yes/no basis rather than a scale, rendering a less sensitive assessment. However, a scale was not considered feasible due to the low literacy of the participants. The findings show the attitudes of participants at two time points (before and immediately after the intervention), and the effect of the intervention may wear off over time and not affect overall behavioural change. As a result, continuous observation of the behaviour of parents and leaders is required.

Public health implications

While we have shown that educational interventions can facilitate positive changes in the attitudes of parents and religious leaders towards FGM, it is not known if this will translate into sustained behavioural change. Studies have shown that health education programmes are insufficient to achieve the complex behavioural change required for the abandonment of FGM.²⁰

Population-level interventions such as social marketing campaigns and legislation, as well as community-based activities, school education²¹ and health professional training, are required. FGM prevention must involve male and female community members alongside religious and traditional leaders and health professionals.^{21 22} A comprehensive approach is therefore needed to eliminate FGM that is based on a practical framework beyond reproductive health to include 'gender education' to address deeply rooted traditions.²³

Six main approaches to ending FGM have been suggested by Miller and Moneti *et al*²³ based on lessons learnt from campaigns against foot-binding in China. These include the use of (1) non-coercive and non-judgmental approaches that focus on human rights and female empowerment; (2) awareness-raising initiatives for affected populations; (3) bottom-up community-based approaches; (4) collective methods to build community commitment to the abandonment of FGM; (5) sustainable diffusion of innovative methods and (6) a supportive political environment.

CONCLUSIONS

Our study suggests that brief educational interventions can be an effective strategy for changing the attitudes of parents and leaders towards FGM. However, such interventions must involve both men and women and be delivered alongside other strategies to ensure a multifaceted approach to addressing complex social dynamics. A comprehensive public health approach is therefore necessary that includes legal measures, community-based action and a health system approach.

Acknowledgements We would like to present our deep gratitude to the Mokhtars who cooperated with us to perform the education.

Contributors DMA and BAS participated in concept, review, data collection, design and data analysis. The statistical extractions were performed by DMA only. AD contributed to review, revision and analysis, and discussion of the study results.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement There are no data in this work.

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