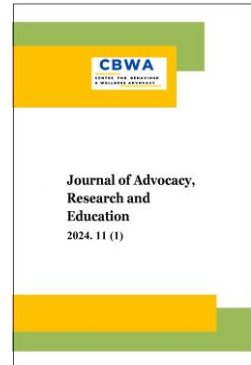







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Harmful Cultural Traditions: An Analysis of Female Circumcision Practice in Maldives

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Abstract

Female circumcision (FC) affects the lives of millions of girls and women worldwide. This study assessed the demographic and socio-economic factors associated with female circumcision among women aged 15-49 in Maldives. Data for this study were extracted from the 2016–2017 Maldives Demographic and Health Survey, collected from a nationally representative probability sample of 7699 households interviewing women aged 15-49 years. The statistical analysis of this study focused on women aged 15-49 years who have heard about FC, excluding those who have never heard of FC (n = 5943). Analyses of data entailed descriptive statistics (frequencies and percentages) and estimation of logistic regression models to examine the roles that demographic, economic, and social factors play in the occurrence of FC in Maldives. The primary variable of interest (dependent variable) was the occurrence of FC. The factors included women's current age, age circumcised, highest education level, occupation, region, wealth quintile, and women's reported attitudes towards FC. Among all respondents, 17 % of the 5943 women who have heard of female circumcision reported having undergone the procedure. The findings revealed a significant difference in female circumcision by age, education, occupation, and attitudes towards FC. Furthermore, most circumcisions occurred before age 5 and were highest in Malé (capital city) and the island atolls in Maldives's South and North regions. The variables related to opinions were most strongly associated with female circumcision. Women who believed that their religion required FC or that the practice of FC should continue are more likely to be circumcised than women who do not hold this opinion. It was more than double. In addition, cross-tabulations of the opinion variables with age and region have found that the highest proportion of women who held these beliefs was in the age group 25-39 and lived in Malé. Therefore, we recommend further research and encouragement to enact policies and legislation that would eliminate the practice of female circumcision in Maldives.

Keywords: cultural norms, female genital mutilation, harmful cultural traditions, violence against women.

1. Introduction

Female genital mutilation/circumcision (FGM/C) refers to “*all procedures involving partial or total removal of the female external genitalia or other injury to the female genital organs for non-medical reasons*” (World Health Organization, WHO, 2008). The practice has no health

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benefits for girls and women. Long-term consequences may include health problems such as menstrual problems, increased risk of childbirth complications, difficulties with sexual intercourse, the need for additional surgeries, and psychological problems (Klein et al., 2018). It is estimated that 3 million girls are at risk of undergoing FGM/C in different parts of the world every year (WHO, 2008). Internationally, the practice has been recognized as a human rights violation and discrimination against women and girls (WHO, 2008). This includes violations of the Universal Declaration of Human Rights, the Convention on Eliminating All Forms of Discrimination against Women (CEDAW), the Convention on the Rights of the Child, and many other international treaties and consensus agreements (WHO, 2008). Thus, the legislative approach is vital for eliminating FGM/C.

The WHO terminology for FGM/C classification is summarized in Table 1 (WHO, 2008). Type I and Type IV are the most common types reported across Asia (ARROW and Orchid Project 2020). FGM/C is referred to as female circumcision (FC) across many Southeast Asian countries (WHO, 2018), including Maldives.

Table 1. WHO Terminology for FGM/C Classification (WHO, 2008)

Type	Description
Type I – Clitoridectomy	Partial or total removal of the clitoris (a small, sensitive and erectile part of the female genitals) and/or the prepuce (the clitoral hood or fold of skin surrounding the clitoris).
Type II – Excision	Partial or total removal of the clitoris and the inner labia, with or without excision of the outer labia (the labia are the ‘lips’ that surround the vagina).
Type III – Infibulation	Narrowing of the vaginal opening by creating a covering seal. The seal is formed by cutting and repositioning the inner or outer labia, with or without removal of the clitoris.
Type IV – Other	All other harmful procedures to the female genitalia for non-medical purposes, e.g., pricking, piercing, incising, scraping and cauterizing (burning) the genital area.

Although it is considered a violation of human rights, FC is believed to be a practice originating from communities that want to control female sexual behaviour and ensure women’s virginity (WHO, 2008). In societies where FC is practiced, the practice is considered to be socially upheld, and it is based on the assumption that religious norms expect people to follow this practice (WHO, 2018). Some believe that FC is a religious requirement, although it is not mentioned in major religious books (Williams-Breault, 2018). In most Southeast Asia countries, FC practices are broadly accepted within communities and adhere to social norms associated with a range of complex and disputed motivations. Since Islamic Southeast Asia countries such as Indonesia and Malaysia largely adhere to Islamic law, religious leaders have strongly supported FC (Dawson et al., 2020). Some religious scholars in The Maldives have made similar pronouncements. In 2011, a religious scholar in The Maldives encouraged the practice of FC and suggested that FC was part of practicing Sunni Islam, the largest branch of Islam (Dawson et al., 2020). The continuing religious support for this practice in the region increases the sensitive nature of FC. Thus, collaborative approaches are required to prevent this practice from continuing.

Parallel to traditional practitioners performing FC, the practice has largely become medicalized in many Southeast Asia countries, including Indonesia, Malaysia, and Singapore (Ainslie, 2015; Cappa et al., 2019; Patel, Roy, 2016). These actions appear to disregard the zero-tolerance approach adopted by the United Nations. The goal of Sustainable Developmental Goal (SDG) 5 is to achieve gender equality and empower all women and girls, while SDG 5.3 calls for eliminating “*all harmful practices such as child, early and forced marriages and female genital mutilation*” (United Nations, 2022).

To achieve success in preventing the continuation of FC, it is important to identify the driving forces underlying this practice, such as the policies in place, current practices, and community beliefs (Berg, Denison, 2013). Rights-based health interventions are important to promote alternatives that can minimize or stop FC. Transmitting the message through educational programs such as leaflets and booklets, as well as training manuals for healthcare professionals, helps to create awareness rather than behaviour change, which results in short-term outcomes. Government action is necessary to create a political and legal environment that diverts people from allowing women to undergo the procedure willingly. Religious and community leaders must play a significant role in sharing religious perspectives through media campaigns, training, and outreach programs that bring about desirable behaviour change (Williams-Breault, 2018).

Female Circumcision in the Maldives

To date, the only existing formal publication on FC is in the Maldives Demographic Health Survey (DHS) in 2016-17, which showed that 13 % of women aged 15-49 and 1 % of girls aged 0-14 were circumcised (Ministry of Health..., 2018). It was reported in the CEDAW Shadow Report (Hope for Women, 2012) that the most prevalent type of FC in the Maldives is Type IV, with pricking, piercing, incising, and cauterizing the area (see Table 1). "Female circumcision" is the term most commonly used in Maldives. Thus, FC is used in this study.

It was said that FC was "widely known to have occurred in The Maldives," although it has been reported that the practice had stopped during the 1980s and 1990s (Hope for Women, 2012). In December 2009, a newspaper article in The Maldives reported that the then Attorney General had concerns that FC was being practiced in one of the islands of Maldives, Addu Atoll (Minivan News, 2009). The Attorney General's statement was reported in the CEDAW Shadow Report: "...religious scholars are going around to midwives giving fatwas (fatwa is a term used for ruling on the point of Islamic law given by a recognized authority) that girls have to be circumcised. They're giving fatwas, saying it is religiously compulsory. According to my information, the circumcision of girls has started and is going on ..." (Hope for Women, 2012). In October 2011, the same newspaper (Minivan News, 2011) reported on this issue, quoting the then Vice President of Maldives, as "we are beginning to hear reports of this occurring. I have heard people justify the practice on the radio and television. It is quite disheartening."

The United Nations and other international agencies (ARROW, Orchid Project, 2020; UNFPA, 2020; UNICEF, 2020) also reported their concerns about Maldivian religious scholars promoting FC, and linking the practice with Islam, even though FC is not an obligation of any religion. These concerns brought the threat of FC into the open and onto the policy table (Hope for Women, 2012; Maldives: CEDAW Report, 2019). Among circumcised women aged 15-49, over 80 % were circumcised before age 5, which showed that FC is commonly performed between birth and early childhood. Although the data on circumcised girls aged 0-14 is at 1 %, indicating a decrease in FC practice, this practice still exists in The Maldives. Among women who had heard of FC, 10 % believed that their religion required the practice, and 8 % believed that the practice should be continued (MOH..., 2018). These data and Maldivian religious scholars' recent promotion of FC (Hope for Women, 2012) suggest that FC will continue in Maldives. However, to date, there are no known efforts to investigate the persistence of this issue, nor have any actions been taken to ratify specific national legislation, national policies, or initiatives that criminalize FC in Maldives. Therefore, this study aims to create awareness of the persistence of FC in Maldives and provide information on the practice of FC that can serve as basis for policies, programs, and recommendations for legislation and intervention programs needed to combat FC practice Maldives.

Theories and Concepts

Understanding the factors that perpetuate FC and how these factors interact with social change processes are critical to understanding why and how communities continue the practice. There are two approaches relevant in the literature on FC: the social convention model and the norm internalization theory. Cultural traditions that have persisted over time represent the values and convictions that have permeated a community for a number of generations (UNICEF, 2009). It was reported in the UNICEF report that the most important argument for the continuation of FC is the claim that it is custom and tradition, one of around six pre-coded responses in DHS surveys (UNICEF, 2009). The survey respondents' appeal to tradition is consistent with the social

convention model, which asserts that when sufficient numbers of people support and perform FC, the practice becomes locked in place (Mackie, 1996; UNICEF, 2009).

The marriageability and health interests have been prioritized in the application of the Social Convention Theory to FC up until this point, with little explicit discussion of normative considerations (UNICEF, 2009). The continuation of FC entails legal (social acceptance and disapproval) and religious conventions (moral judgments of right and wrong) (UNICEF, 2009). Social norms are beliefs about what other people do and find acceptable. When people internalize social norms—accepting a set of norms and values that others have established—they become more motivated to follow them (Cislaghi, Heise, 2018). Thus, by internalizing norms, people are conditioned to conform to society's expectations.

From that theoretical perspective, FC practices can generally be recognized to exist and continue due to various factors that include demographic, economic, and social factors. The customized conceptual framework (Figure 1) builds on existing literature to analyze the demographic, economic, and social factors associated with the occurrence of FC among women aged 15-49 in Maldives.

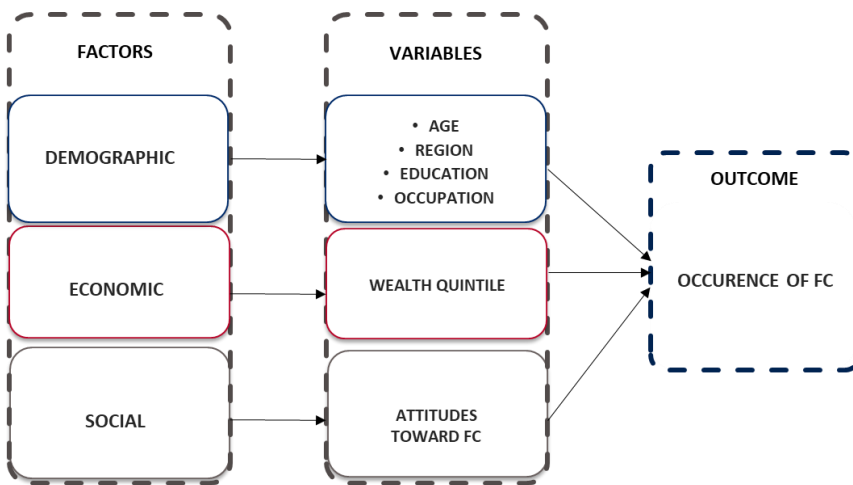


Fig. 1. Conceptual Framework

The above conceptual framework shows the expected linkages between the occurrence of FC and demographic, economic, and social factors. As the framework indicates, there are direct links between demographic and economic factors and FC occurrence. These links are evident in the findings of Ahinkorah (2021) and Inungu and Tou (2013), that found age, religion, wealth, maternal education, and women's occupation to be significantly related to the occurrence of FC among women aged 15-49. Ahinkorah's (2021) study was based on the 2014-2015 Chad DHS, which sought to learn more about a population and health issues related to FC, whereas Inungu and Tou (2013) focused on determining the factors that contribute to the practice of FC among women (age 15-49) and their daughters in Burkina Faso.

In countries where FC is practiced, most girls are circumcised before age 5 (Shell-Duncan et al., 2016). According to Gebremariam et al. (2016), the most common ages for FC are between ages 5 to 10. *Other researchers reported a similar age range* (Elduma, 2018; Gudeta et al., 2022; Kandala et al., 2019). In these studies, religion, residence, maternal education, and occupational status were significantly associated with FC. For example, in the United Arab Emirates, FC was highest among housewives (58 %) and unemployed (57 %) women (Gudeta et al., 2022). In Keffa Zone, Southwest Ethiopia, women from rural residences were seven times more likely to be circumcised (Elduma, 2018). Also, in Sudan, women aged between 14-49 years with a low level of education were more likely to be circumcised than women with a high level of education (Al Awar et al., 2020).

It has also been reported that FC has been adopted by new religious scholars and communities that have been influenced to adopt the practice. Grose et al. (2019) stated that what others do and expect a woman to do in a shared community matters for her ability to reject a harmful social norm like FC. There is no connection between FC and religion, despite the belief in

many cultures that religion, particularly Islam, is one of the underlying reasons FC is practiced (Shell-Duncan et al., 2016). Shell-Duncan et al. (2016) also reported that those with less education, who live in rural areas, and who come from low-income families seem to be more supportive of FC.

Research Problem

Although recent research shows that the Maldives are experiencing a decrease in FC (MOH..., 2018), the practice still exists (Hope for Women, 2012). Nevertheless, little rigorous research has been conducted to understand the prevalence and practice of FC in the Maldives. The central research question centers on the roles demographic, economic, and social factors play in the occurrence of FC in Maldives. Legislation and other policy initiatives are among the most effective strategies for violence prevention. According to the WHO (2018), a whole government approach is required to create a culture of zero tolerance for FC. Studying the factors associated with the occurrence of FC can promote a collaborative spirit where relevant stakeholders unite in a shared vision to end this practice in Maldives. The results of this study aim to inform decisions on the development of specific national legislation that criminalizes FC and specific national policies and initiatives focused on eliminating FC in Maldives. The study results also emphasize the immediate need for research that can fully capture and understand the prevalence and practice of FC in Maldives.

2. Methods

Study Setting

The Maldives has 22 geographical atolls, including about 1,200 islands spread across 21 Administrative Regions (20 administrative Atolls and the Malé area), grouped into six geographical regions: Malé, North, North Central, Central, South Central, and South. The total residential population of 402,071 residents (338,434 Maldivians and 63,637 international migrants) is dispersed across 188 inhabited islands. Around one-third (38 %) of the population resides in the capital Malé. All Maldivians share the same culture and speak *Dhivehi*, the Maldivian language. Sunni Islam is the state religion, and all permanent residents must be Muslim. This means that those who want to be a resident of Maldives must convert to Islam (United Nations Maldives, 2020).

Data Source

The 2016-17 Maldives DHS survey collected data from a nationally representative random sample of households and women of reproductive age in sampled houses. Data were derived from the 2016-17 Maldives Demographic and Health Survey co-conducted by ICF Macro International and the Ministry of Health in the Maldives. The information used in the study was about FC from all women of reproductive age who indicated that they had heard about FC. A three-stage cluster sampling was employed in the survey, and data analysis was carried out using descriptive statistics, proportional tests, and logistic regression. The analysis was weighted to obtain national estimates of FC prevalence and associated differentials.

Study Sample

Outcome variable

The primary variable of interest (dependent variable) was the occurrence of FC, which is binary in nature (yes or no). In addition, only women aged 15-49 who have heard of FC were included in the analysis. This resulted in a sample size of 5,943 individuals after applying sample weights. Figure 2 shows how the survey derived this subsample. The denominator includes those women who have heard of FC.

Independent variables

The choice of independent variables was based on the data from the literature and was defined at the cluster, household, and individual levels. The individual level variables are women's current age, age circumcised (<5, 5-9, 10-14, 15+), highest education level (none, primary, secondary, and higher), occupation, and women's reported attitudes towards FC. The occupation variable was recoded into five main categories: 1. Not working, 2. Professional, which includes technical and managerial, 3. Administrative and clerical, which includes sales, and services, 4. Household, domestic and agriculture combined unskilled manual, agricultural, and household and domestic work, and 5. Skilled, which combined skilled manual with armed forces and others. Two questions were used to measure attitude towards FC. One asked if the women thought FC is required by their religion, and the second asked if they thought FC should continue. The remaining variables in the analysis include other cluster-level variables of the region (Malé, North, North

Central, Central, South Central, and South region). The household variable includes wealth quintiles (lowest, second, middle, fourth, and highest).

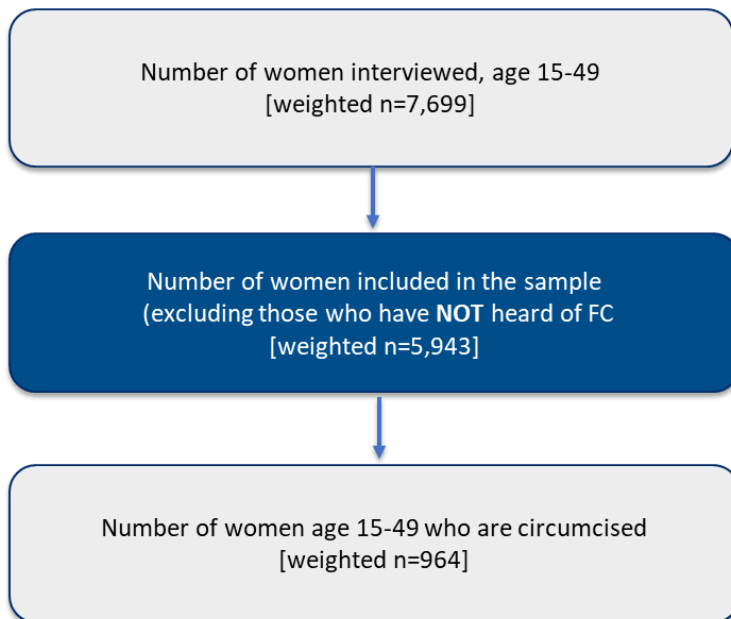


Fig. 2. Study sample

Statistical Analysis

In the analyses, the occurrence of FC was the dependent variable, and the other variables were independent variables. Descriptive statistics and percentages were computed to describe the variation of the percentages of the women aged 15-49 who were circumcised and the age at which they were circumcised. Chi-square tests of association were performed between the independent variables and the outcome. Logistic regression analyses were used to identify the variables' associations with the occurrence of FC. For further analysis of the attitude variable, women's current age was recoded into 3 groups (15-24, 25-39 and 40 and above), and regions were recoded into 4 categories (Malé, North, Central [which included Central, North Central, and South Central regions], and South).

The analyses were conducted with STATA 17 software. To ensure representativeness across the country and to correct for non-response, the data were weighted, and we considered the complex survey design in the analyses, using the SVY command in Stata. Statistical significance was determined at $p < 0.05$.

3. Results

Characteristics of the Study Population

The data from the 2017 Maldives DHS were analyzed with a subset of 5,943 women aged 15-49 who have heard about FC. [Table 2](#) presents the percentage distribution of the sample. A majority of women were aged 25-39 (51 %), had secondary or higher education (72 %), were not working (50 %), and were residing in Malé (48 %) at the time of the survey. The distribution of wealth quintile ranged between 16 % to 24 % in each category. Overall, 17 % of the women who have heard about FC reported being circumcised ([Figure 3](#)). Approximately 83 % of circumcised women were circumcised before age 5, and around 15 % were unable to report an age ([Table 2](#)).

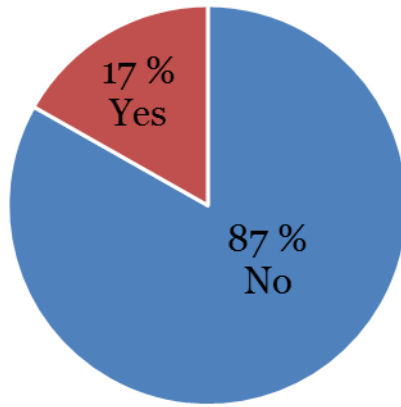


Fig. 3. Circumcision status among women aged 15-49 who have heard of FC

Table 2. Background characteristics

Background characteristics	%	Frequency
Circumcised among women aged 15-49		
No	83.2	4947
Yes	16.8	996
Age in 5-year groups		
15-19	11	655
20-24	15.3	908
25-29	17.5	1038
30-34	18.3	1090
35-39	14.8	880
40-44	11.9	709
45-49	11.1	662
Highest educational level		
no education	4.5	267
primary	23.1	1375
secondary	48.6	2890
higher	23.8	1412
Wealth index combined		
lowest	16.3	969
second	17.4	1035
middle	19.7	1169
fourth	22.6	1342
highest	24	1429
Region		
Malé	47.6	2826
North	11.9	709
North Central	10.2	608
Central	6.6	391
South Central	10.5	622
South	13.3	788
Women's occupation		
Not Working	49.5	2944
Professional	23.8	1412
Admin and Clerical	9	532
Household, domestic and agriculture	5.1	302
Skilled	12.7	753

Background characteristics	%	Frequency
Opinion on whether female circumcision is required by their religion		
No	89.8	5339
Yes	10.2	604
Opinion on whether female circumcision should continue		
No	91.7	5449
Yes	8.3	495
Age at circumcision		
<5	83.1	827
5-9	1.6	16
10-14	0.4	4
15+	0.4	4
Don't know/missing	14.5	144
Total	100	996

Associations of Demographic, Economic, and Social Factors

Table 3 describes the associations between FC and the independent variables. All variables were significantly associated with FC except for the wealth quintile and region. The percentage of circumcised women increases with age. Approximately 42 % of the oldest age group (women aged 40-49) have been circumcised. Women's educational level is negatively associated with the occurrence of FC. For example, the higher the education level, the lower the proportion of circumcised women. However, slightly more women with higher education were circumcised than those with secondary education (13 % and 10 %, respectively).

With occupation, the proportion of circumcised women is the highest among the group who is engaged in household, domestic, and agricultural work (26 %) or skilled work (24 %) compared to those who worked in other professions (professional 13 %), and in administration or clerical positions (13%). Approximately 16% of women who were circumcised were not working. Finally, the prevalence of circumcision is greater among women who believe that FC is required by their religion and that FC should continue than those who don't believe these statements. Approximately 43 % of women who reported that FC is required by their religion were circumcised, compared to 14 % of women who reported that FC was not required by their religion. Similarly, 45 % of women who reported FC should continue were circumcised, compared to 14 % of women who reported that FC should not continue.

Table 3. Cross tabulation of female circumcision among women aged 15-49 and background variables

Variable	%	95% CI	p-value
Age in 5-year groups			
15-19	1.7	[0.7,4.1]	<0.001
20-24	7.5	[4.7,12.0]	
25-29	8.2	[6.0,11.0]	
30-34	14.7	[11.8,18.2]	
35-39	22.2	[18.2,26.8]	
40-44	28.0	[23.3,33.2]	
45-49	41.8	[36.1,47.7]	
Highest educational level			
none	37.3	[29.1,46.3]	<0.001
primary	30.4	[26.7,34.4]	
secondary	10.1	[8.6,11.8]	

Variable	%	95% CI	p-value
higher	13.3	[10.7,16.4]	
Wealth Quintile			
lowest	20.0	[17.1,23.3]	0.084
second	17.1	[14.6,20.1]	
middle	16.0	[13.7,18.5]	
fourth	17.8	[14.1,22.2]	
highest	13.9	[11.3,17.0]	
Women's occupation			
Not Working	16.4	[14.7,18.3]	<0.001
Professional	13.3	[10.7,16.3]	
Admin and Clerical	12.9	[8.4,19.4]	
Household, domestic and agriculture	25.8	[19.7,33.1]	
Skilled	23.7	[19.9,27.9]	
Region			
Malé	16.7	[14.3,19.3]	0.286
North	18.4	[15.1,22.2]	
North Central	14.6	[11.1,18.9]	
Central	13.8	[10.8,17.4]	
South Central	15.5	[11.7,20.1]	
South	19.7	[16.0,24.1]	
Opinion on whether female circumcision is required by their religion			
No	13.8	[12.3,15.4]	<0.001
Yes	43.1	[37.6,48.8]	
Opinion on whether female circumcision should continue			
No	14.2	[12.8,15.7]	<0.001
Yes	44.7	[38.6,50.9]	

Based on the findings, the variables that show significant variation in the percentage of women reporting to have been circumcised are age (higher in the older age groups), education (higher in lower levels), occupation (higher among those doing household, domestic and agriculture work, skilled labour), and attitudes toward FC (higher among those who believe their religion requires FC and who believe that FC should continue).

Regression Results of Female Circumcision

Table 4 presents the adjusted odds ratios of the association between the occurrence of FC and demographic, economic, and social characteristics. Age was significantly and positively associated with FC, which indicated the increasing likelihood of FC with increasing age. The OR of 1.1 indicates that for every year of increase between ages 15-49, the odds of circumcision increased by approximately 10 %, on average. While the wealth quintile and region were not found to be significantly associated with FC in the bivariate analysis (Table 3), there were significant findings for these variables in the regression analysis after controlling for other variables. Women in the highest quintile have approximately 40 % lower odds of being circumcised compared to women in the lowest wealth quintile (OR = 0.4, $p < 0.01$). In addition, women who currently reside in the Malé (OR = 2.1, $p < 0.01$), North Region (OR = 1.5, $p < 0.05$), and South Region (OR = 1.6, $p < 0.05$), have significantly higher odds of being circumcised compared to women in the Central Region.

The opinion variables have the greatest magnitude of association with FC. Women who thought that FC is required by their religion (OR = 2.2, $p < 0.001$) or thought that FC should continue (OR = 2.7, $p < 0.001$), had more than twice the odds of being circumcised compared to

women who did not have these opinions. Further analysis of these two variables was conducted to assess the association between opinion variables, age, and region. While the bivariate analysis detected a significant association between occupation and FC, and education and FC, these variables were not significant in the logistic regression after controlling for other variables.

Table 4. Logistic regression of female circumcision among women aged 15-49 and background variables

Variable	OR	95 % CI
Respondents current age		
age in single years	1.1***	1.06–1.11
Highest educational level		
no education (reference)	1.0	
primary	1.1	0.71–1.68
secondary	0.7	0.45–1.14
higher	0.9	0.59–1.63
Wealth quintile		
lowest (reference)	1.0	
secondary	0.8	0.62–1.10
middle	0.8	0.64–1.09
fourth	0.7	0.48–1.12
highest	0.4**	0.28–0.76
Women's occupation		
not working (reference)	1.0	
professional	0.9	0.71–1.38
admin and Clerical	1.4	0.84–2.33
household, domestic and agriculture	1.2	0.84–1.86
skilled	1.1	0.89–1.46
Region		
Malé	2.1**	1.30–3.49
North	1.5*	1.02–2.34
North Central	1.1	0.67–1.66
Central (reference)	1.0	
South Central	1.2	0.75–1.95
South	1.6*	1.05–2.47
Opinion on whether female circumcision is required by their religion		
No (reference)		
Yes	2.2***	1.46–3.44
Opinion on whether female circumcision should continue		
No (reference)		
Yes	2.7***	1.72–4.09

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Associations of Opinion Factors

Table 5 shows the cross-tabulation of the opinion variables with age and region. We observe that among women who believe FC is required by religion, 47 % were aged 25-39, and among women who believed FC should continue, 44 % were aged 25-39. The proportion of women who thought that FC is required by religion is highest in Malé (50 %) and the South Region (22 %). The same trend is found among women who thought FC should continue, with the highest in Malé (48 %) followed by the South Region (23 %).

Table 5. Cross-tabulation of opinion variables and background variables

Variable	%	95 % CI	p-value	%	95 % CI	p-value
Age (5-year gaps)	Opinion-FC is required by their religion			Opinion-FC should continue		
15-24	15	[11.2,19.7]	<0.001	20.2	[15.7,25.6]	<0.001
25-39	46.7	[41.1,52.4]		43.6	[37.8,49.6]	
40 and above	38.3	[32.4,44.5]		36.2	[30.2,42.7]	
Regions	Opinion-FC is required by their religion			Opinion-FC should continue		
Malé	49.8	[43.2,56.5]	<0.001	48.1	[40.5,55.7]	<0.001
North	20.8	[16.9,25.4]		20.7	[16.7,25.4]	
Central	6.4	[4.8,8.6]		7.8	[5.9,10.4]	
South	22.9	[19.1,27.3]		23.4	[19.0,28.4]	

4. Discussion

This study aimed to assess the demographic, economic, and social factors associated with the occurrence of FC among women aged 15-49 in Maldives. The characteristics found to be positively associated with the occurrence of FC were age, wealth quintile, region, and attitudes towards FC.

The results show that being circumcised is generally reported among older women. Age was a significant and positive predictor of female circumcision in the logistic regression model. Our study also found that most women were circumcised when they were younger than age 5. This corroborates previous research that reported that the occurrence of FC is primarily seen in young girls ranging from birth to age 10 (Elduma, 2018; Gebremariam et al., 2016; Shell-Duncan et al., 2016). Furthermore, in a study in Egypt, Refaat et al. (2001) found that increasing age was a significant predictor of FGM prevalence. Similar findings are reported by Sakeah et al. (2018) and Karmaker et al. (2011), where it was found that increasing age was associated with a higher likelihood of having undergone FC. These studies also suggest that age plays a role in FC prevalence, with older women being more likely to have undergone the practice. However, it is important to note that the reasons for this association may vary across different cultural and geographic contexts.

The literature highlights that greater availability of and exposure to information in urban versus rural settings creates awareness among the communities and reduces the practice of FC. Yet, the higher odds found in Malé (entirely urban) compared to the Central Region (entirely rural) could be a result of increased rural-to-urban migration. Many Maldivians from the rural islands chose to relocate to Malé rather than the nearby regional centres (United Nations Maldives, 2020). Malé is now home to nearly half of the women in our sample, with many who may have relocated there in the past few decades (1980-2020) (United Nations Maldives, 2020).

At the household level, the wealth quintile was significantly associated with the occurrence of FC. Women in the highest wealth quintile had significantly lower odds of being circumcised than those from the lowest. However, the other wealth quintiles did not significantly differ compared to the lowest. This aligns with previous studies that found the main reason for the prevalence of FC is the family's economic status (Ahinkorah, 2021; Al Awar et al., 2020; Inungu, Tou, 2013).

When examining attitudes towards FC, among women who heard about circumcision, approximately 10 % believed that their religion requires FC, and 8% supported the continuance of FC in Maldives. The model shows that women who thought that FC was required by their religion or thought that FC should continue had more than twice the odds of being circumcised compared to women who did not hold these opinions. Cross-tabulations of these opinions by age have shown that nearly half of women aged 25 to 39 had these opinions. Since we have seen that circumcision usually occurs at a young age, these women in their reproductive prime may favour FC for their newborn daughters. Several studies have corroborated this finding, indicating that religious beliefs and cultural traditions play a significant role in perpetuating the practice of FC. For example,

a study conducted in Ethiopia found that religious beliefs and traditional attitudes towards female sexuality were the primary reasons for the continuation of FGM practice in the country (Alemu et al., 2021). Similarly, a study in Mali found that the majority of women believed that FGM was required by their religion, and those who held this belief were more likely to have been circumcised (Gudeta et al., 2022). However, some studies have contradicted this finding, suggesting that the relationship between religious beliefs and FC practice is complex and nuanced. For example, a study conducted in Kenya found that although religious beliefs were important in determining FC practice, the influence of religion varied depending on the type of religion and the cultural context. In some communities, FGM was practiced among both Christians and Muslims, while in others, it was only practiced by Muslims (Hughes, 2018). Overall, while there is evidence to suggest that religious beliefs and cultural traditions play a significant role in perpetuating the practice of FGM, the relationship between religion and FGM practice is complex and varies depending on the cultural context.

While this study only explored the association between age and region and the likelihood of holding these opinions, additional factors, such as educational attainment among women and women's empowerment, may affect these opinions. Various factors have been shown to have significantly contributed to the levels of opposition to FC, such as higher educational attainment among women, legislation prohibiting the practice, and awareness-raising programs (ARROW, Orchid Project, 2020; Dawson et al., 2020; WHO, 2008).

5. Conclusion

Based on the nationally representative 2016-17 Maldives DHS, this study identified factors associated with the occurrence of FC in The Maldives. The study shows high FC occurrence among older women, those from low economic backgrounds, and those residing in specific regions (Malé, North and South Regions). In addition, attitudes toward FC were found to be major determinants of FC occurrence. However, it should be noted here that the survey measured the current attitude, where FC had already happened in the past. This could also imply that the women had these views because they were circumcised.

6. Limitation

The study had both its limitations and its strengths. The study's strengths include using nationally representative data to investigate a significant public health issue of international concern and using a multi-stage sampling strategy to obtain a sizable sample size that allowed for the generalization of the results to the entire population. However, because the study used cross-sectional survey data, it was challenging to determine causality as opposed to associations. Additionally, there is a chance of recall bias because data on the primary independent and dependent variables were collected retrospectively.

7. Recommendations

This study demonstrates that further research is crucial to assess the prevalence and practice of FC in The Maldives. Research continues to be needed on aspects that can contribute to eliminating and preventing FC. In this study, we did not find a clear relationship between education or occupation and the occurrence of FC. More research is needed to understand how education and occupation affect FC in Maldives. Additional topics that require further study include the current prevalence and practice of FC in Maldives, girls' and women's experiences of the practice, psychological consequences of FC, and the impact of legal measures to prevent the practice.

The study also shows that policies and legislation focused on eliminating FC are essential because a percentage of women still believe FC is required by their religion and should be continued (10 % and 8 %, respectively). Bringing an end to FC requires a broad, long-term commitment. Our study found that diverse factors, including age, socio-economic status, region, and attitudes, were all associated with FC occurrence. Therefore, actions and interventions that eliminate FC must be multisectoral, sustained, and community-led. Sectors such as education, finance, justice, and the health sector should cooperate to take concerted action.

8. Declarations

Ethics approval and consent to participate

This article utilizes secondary datasets that were collected after requisite ethical approval.

Consent for publication

All authors read and approved the final version of the manuscript for publication and agree to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Availability of data and materials

The DHS Program datasets are publicly available and can be downloaded free of charge for research purposes. Researchers first have to register to gain access to the dataset. <https://dhsprogram.com/data/new-user-registration.cfm>.

Conflict of interest statement

The author reports no conflicts of interest.

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Authors' contributions

F.I. devised the project, the main conceptual ideas and the interpretation of data for the article. A.I.S. edited the article and revised it critically for important intellectual content. A.A. worked out almost all the technical details and performed the statistical analysis.


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