

ID Design Press, Skopje, Republic of Macedonia  
Open Access Macedonian Journal of Medical Sciences. 2018 Feb 15; 6(2):430-434.  
<https://doi.org/10.3889/oamjms.2018.099>  
eISSN: 1857-9655  
**Public Health**



# Female Genital Mutilation in Sudan

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## Abstract

**Citation:** Elduma AH. Female Genital Mutilation in Sudan. Open Access Maced J Med Sci. 2018 Feb 15; 6(2):430-434. <https://doi.org/10.3889/oamjms.2018.099>

**Keywords:** Women; Female; Genital mutilation; Circumcision; Sudan

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**Received:** 28-Dec-2017; **Revised:** 15-Jan-2018; **Accepted:** 16-Jan-2018; **Online first:** 14-Feb-2018

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**Funding:** This research did not receive any financial support

**Competing Interests:** The authors have declared that no competing interests exist

**BACKGROUND:** Female genital mutilation or female circumcision (FGM) is a serious health problem in Sudan. This procedure is harmful to women and causes many complications during pregnancy and childbirth.

**OBJECTIVE:** This study aims to determine the female genital mutilation (FGM) and its associated factors in Sudan.

**SUBJECTS AND METHODS:** Data from Sudan Multiple Indicator Cluster Survey (MICS - UNICEF) was used in this research. The survey was carried out in 2014 and included women aged between 14 – 49 years. A logistic regression model was used to find an association between dependent and independent variables.

**RESULT:** Total numbers of 21947 women were included in the survey and out of the 6249 (28.5 %) from urban and 15698 (71.5%) from rural areas. The prevalence of female circumcision was 89%. Women who had circumcised daughters were 32.1 %. The highest prevalence of FGM was reported from South Kordofan state with 7.8%, and lowest was in Red Sea state (7.6%). A significant association was observed between circumcised women and their marital status, daughter circumcision, and the level of education.

**CONCLUSION:** The practice of female genital mutilation is spread all over the country. Poor women with low level of education are at high risk for this phenomenon. More efforts have to be provided to end this dangerous practice.

## Introduction

The WHO defines the female genital mutilation as procedures that intentionally alter or cause injuries to the female genital organs for non - medical reasons. No doubt, this procedure can cause many complications such as problems in urination, bleeding, infections as well as a complication of childbirth leading to newborn deaths [1]. Female genital mutilation or female circumcision or cutting is common practice in Africa and Middle East [2]. There is no clear evidence to indicate where female genital mutilation/ circumcision practices have been reported or performed. According to the previous literature, Egyptians were found practising male and female circumcision/ around the middle of the fifth century B.C. But Infibulations or Pharaonic circumcision, the most prevalent type in Africa. Some studies indicated

that the Infibulation or Pharaonic circumcision title was applied by Sudanese when this practice spread from Upper Egypt to the North Sudan where was called as Sudanese circumcision [3].

There are five types of female genital mutilation in Africa namely Mild Sunna which include the pricking of the prepuce of the clitoris with a sharp instrument. The second is called Modified Sunna in which partial or total removal of the clitoris is applied. Furthermore, the third type is called clitoridectomy / Excision in which the removal of all or part of the clitoris is performed plus a partial or all removal of the Labia minor. Moreover, the Infibulations or Pharaonic circumcision includes clitoridectomy, excision of Labia minor and the inner wall of the Labia major. The fifth type is introcision where enlargement of the vaginal orifice with a sharp instrument is practised [4].

WHO has a different definition of female

genital mutilation and classified it into four categories namely clitoridectomy, excision, infibulations and type four includes all other harmful procedures [5]. Globally, more than 200 million of girl and women have been suffered from FGM in Africa, Middle East and Asia [6]. Reasons for practising FGM are varied from one region to another and include a mix of socio-cultural factors within families and communities. In Africa, people considered FGM as a vital cultural heritage for women to grow properly, as marriage requirements and control women's sexuality. Indeed, people, who are practising this harmful practice they do not consider it as a violation of right or can have dangerous consequences for women life [7]. Consequently, in communities where FGM is practising, it is often driven by belief that it maintains the virginity of women, which can provide safe marriage [8][9]. Moreover, they believe that FGM is hygiene practice and maintain women clean and beautiful. Some people are living where the FGM is common in the community enforced to do it due to social norms as a prerequisite for marriage [10].

Sudan is a developing country located in east North Africa with an area of 1.9 km<sup>2</sup> and the estimated population is 36.2 million in 2014 based on the last census conducted in 2008. The country has major young with more than 15 million children below the age of 18 years and 4.5 million below the age of five years [1]. Furthermore, the country has 18 states with different ethnic groups and different socio-cultural practice. FGM is widely practised in Sudan particularly among girls aged between 6 and 12 years old. The FGM is usually performed by the midwife without any anaesthesia or antibiotic [11]. This study used the Multi Indicators Cluster Survey data to determine the distribution of the female genital mutilation and the related factors in different areas of Sudan.

Sudan national survey data on female genital mutilation was obtained from the Multiple Indicator Cluster Survey (MICS - UNICEF). The data was a household on female genital mutilation of women aged 14 to 49 years in Sudan, 2014. Consequently, data were collected by using community survey questionnaire (Multiple Indicator Cluster Survey). The questionnaire was designed to collect data from 40 areas in each state. Furthermore, two stages clustering sampling technique was used to collect data. So, rural and urban areas were identified as the main sampling strata. Probability proportional to the size of enumeration areas was systematically selected from the strata. Variables included in the survey were resident areas where it is rural or urban, women educational level, wealth index quintile, women female genital mutilation experience, and if the women had ever heard about FGM or not. Women deemed to be eligible to be included in the study were those who aged between 15 - 49 years old.

## Statistical analysis

Data were computed and analysed using the Statistical Package for Social Sciences (SPSS - IBM 20). Both descriptive and analytical statistics as chi-square statistical test, multiple logistic regression models were performed. Binary logistic regression was used to examine the relationship between predictors and female genital mutilation. Subsequently, variables significant in the binary logistic analysis (with  $p < 0.05$ ) were included in the multiple logistic regressions. Consequently, multiple logistic regressions were used to determine which predictor was independently associated with women circumcision. Then, daughter circumcision, residence (rural-urban), education level, wealth index, marital status, and age of circumcised daughter were fed in the model as independent variables.

## Results

Total numbers of 21947 women were included in the survey from all 18 states in Sudan. A total number of 6249 women (28.5 %) from urban, and 15698 (71.5 %) from rural areas were included in this survey. All surveyed women indicated that they have heard about female genital mutilation during their life. The prevalence of female circumcision among the women age 14 to 49 years in Sudan was 89 %.

**Table 1: Basic characteristics of surveyed women**

Item	No	%
Area		
Rural	15698	71.53
Urban	6249	28.47
Total	21947	100
Maritalstatus		
Currently married	20898	95.22
Previously married	1049	4.78
Total	21947	100
Education		
No education	11157	54.69
Primary	6696	30.51
Secondary	3248	14.80
Higher education	386	3.81
Total	21487	
Wealthindex		
Poorest	4929	22.46
Second	5246	23.99
Middle	4768	21.73
Fourth	3713	16.92
Richest	3273	14.90
Total	21947	
Women circumcision		
Circumcised	19451	89.1
Not circumcised	2406	10.9
Total	21947	
Ever heard about circumcision		
Yes	21974	100
No	0	0
Total	21947	

The majority of women involved in this survey (95.2 %) are currently married. The proportion of the

circumcised women with no education was 54.7 %. Meanwhile, it was 3.8 % among circumcised women with higher education (University and above). The prevalence of female circumcision was higher among women living in rural areas (71.5 %) compared to those who live in urban areas (28.5 %) (Table 1). On the other hand, the study indicated that only 32.1 % of daughters were circumcised.

The highest prevalence of FGM was reported from South Kordofan state (7.8 %), followed by East Darfur with the percentage of 7.6. The lowest prevalence of female genital mutilation was in Red sea state which was 3.0 % (Table 2).

**Table 2: Distribution of circumcised women in different states**

No	State	No of circumcised women	%
1	Red Sea	648	3.3
2	Kassala	926	4.7
3	Gadarif	1099	5.6
4	Khartoum	1093	5.6
5	Gezira	1246	6.4
6	White Nile	1228	6.3
7	Northern	1049	5.3
8	River Nile	968	5.0
9	Sinnar	1066	5.5
10	Blue Nile	977	5.0
11	North Kordofan	1154	5.9
12	South Kordofan	1523	7.8
13	West Kordofan	989	5.1
14	North Darfur	1369	7.0
15	West Darfur	756	4.0
16	South Darfur	1324	6.7
17	Central Darfur	640	3.2
18	East Darfur	1486	7.6
Total		19541	

The logistic regression analysis indicated an association between marital status and women circumcision with Crude Odds Ratio (COR = 1.27) and 95 % C.I (1.054 – 1.522). The analysis revealed that women with low level of education practising circumcision more when compared to women with high level of education. Also, the difference of women circumcision in the rural and urban area was statistically significant COR = 1.229 and 95 % CI (1.115 – 1.355). An association also was observed between women circumcision and wealth index where the poorest group had a high rate of circumcision. Daughter circumcision was strongly associated with women circumcision with COR = 19.1, 95 % C.I (14.62 – 24.87) (Table 3).

**Table 3: Logistic regression analysis of the circumcised women predictors**

Predictor	Adjusted Ratio	Odds p. value	Confidence Interval
Education			
Non	Reference		
Primary	0.286	0.000	0.255 - 0.321
Secondary	0.142	0.000	0.115 – 0.176
Higher education	0.194	0.000	0.136- 0.277
Marital status			
Formerly married	Reference		
Currently married	1.27	0.001	1.054 – 1.522
Daughter circumcision			
Not circumcised	Reference		
Circumcised	19.1	000	14.62 – 24.87
Wealth index quintile			
Poorest	Reference		
Second	1.29	0.000	1.151 – 1.464
Middle	1.697	0.000	1.509 – 1.901
Fourth	0.620	0.000	0.531 – 0.725
Richest	0.268	0.000	0.207 – 0.321
Residence			
Rural	Reference		
Urban	1.229	0.000	1.115 – 1.355

Multiple logistic regressions were used to examine the association between women circumcision as the dependent variable and the five predictors which were significant in the logistic regression. The multiple logistic regressions revealed that four predictors were statistically significant when entered into the model. Only the residence predictor was not statistically significant (Table 4).

**Table 4: Multiple logistic regression predictors for circumcised women**

Predictor	Adjusted Odd ratio	p. value	Confidence Interval
Education			
Non	Reference		
Primary	0.264	0.000	0.231 - 0.302
Secondary	0.133	0.000	0.103 – 0.172
Higher education	0.180	0.000	0.117- 0.276
Marital status			
Formerly married	Reference		
Currently married	1.5	0.001	1.184 -1.917
Daughter circumcision			
Not circumcised	Reference		
Circumcised	36.8	000	27.96- 48.54
Wealth index quintile			
Poorest	Reference		
Second	1.423	0.000	1.237 - 1.635
Middle	2.614	0.000	2.259 - 3.026
Fourth	1.543	0.000	1.257 - 1.893
Richest	0.897	0485	0.662 - 1.216
Residence			
Rural	Reference		
Urban	1.032	0.645	0.902 - 1.181

## Discussion

This study was conducted using data from the Multiple Indicator Cluster Survey (MICS) UNICEF, to estimate the prevalence of the Female genital mutilation/ circumcision and the related risk factors among women aged 15 – 49 years old in Sudan. The analysis of the data indicated that the prevalence of the female genital mutilation in Sudan is still high (89 %) particularly in rural areas. This result is almost similar to study conducted in Sudan 1998 which included three areas namely Shendi in River Nile state, ALhaj Yousif in Khartoum and Juba in Sudan. The overall prevalence was 89 % indicating that female genital mutilation still a big problem in Sudan since the prevalence is the same [12].

Furthermore, the analysis of this survey shows that the female genital mutilation was decreased among young women because the percentage was low among daughters. This finding is in agreement with other study conducted in 2003 to assess the attitude of Khartoum University students and found that 56.8% of female students had undergone female genital mutilation [13]. Another study conducted in Khartoum in 2006 reported that 20% of girls aged between 4 to 9 years practised female genital mutilation [14]. Moreover, the result of this study is inconsistent with a study conducted in Africa and involved many countries where the prevalence of female genital mutilation is high. Additionally, the study reported that the prevalence of

female genital mutilation/circumcision was 91% in Egypt in North Africa, 86% in Mali in West Africa, 74 % in Ethiopia in East Africa, and was relatively low in southern part of Africa [7]. Also, a previous study conducted in Senegal using MICS data reported a 39.9 % of women included in the household survey reported had undergone female genital mutilation. Our study reported that 32.1% of surveyed women mentioned that they had daughters was undergone female genital mutilation. This percentage was high when compared with the same study conducted in Senegal where 9.4 of women stated that their daughters had experienced female genital mutilation [15]. Likewise, this result regarding daughter circumcision was in agreement with another study where 79.55% of mother they had undergone female genital mutilation while only 19% of their daughter had experienced female genital mutilation [16]. Besides, another study conducted in Egypt supported this finding where the decrease in the prevalence of female genital mutilation among adolescent women was statistically significant [17].

Our study reveals that female genital mutilation is prevalent among women living in rural areas compared to those who live in urban areas. Thus, this result is supported by a study conducted in Ethiopia where the majority of circumcised women from rural area residents [18]. As a result, the analysis revealed that the prevalence of female circumcision was high among the women with low level of education. The logistic regression analysis revealed that increase in the women education related to the decreases with female genital mutilation. So, this finding conforms with other studies reported from both Ethiopia and Egypt where the low education level is related to a high rate of FGM [19][20].

A high prevalence of female circumcision was among the poorest and the second poorest women indicating that the least wealth groups are associated with female circumcision. Moreover, women with high wealth index were less likely to practice FGM indicating that the economic situation in the community has a role in this phenomenon. Contrarily, a study conducted in Ethiopia reported that women with richer wealth index categories had a higher prevalence of female genital mutilation compared to women in the poorest category [21]. Also, living in urban areas was associated with high rate of women female mutilation in the univariate analysis, but when entered in the multivariate logistic regression it was not significant. So, the prevalence of female genital mutilation is similar in both urban and rural area. A separate study conducted in Egypt indicated that women living in the rural area had a low prevalence of female genital mutilation [22]. No doubt, Female genital mutilation has a connection with many complications that threatening the life

of women during childbirth. These complications include difficulty in a vaginal examination during pregnancy, vaginal Vistula, and postpartum hemorrhagic [23][24]. According to WHO report 2015, the maternal mortality rate is still high in Sudan and accounted for 311 female deaths per 100,000 live births [25]. As a consequence, female genital mutilation has numerous harmful practices that may have a direct or indirect effect on maternal health. Findings of one study conducted by the WHO participated women who had undergone female genital mutilation indicated that they suffered from the high risk of adverse effect during labour and giving birth [26]. Many studies reported the consequences caused by female genital mutilation in Sudan. Reconstructive surgery was done for a woman aged 24 years old suffered from the large vulval mass for the last 6 years due to female genital mutilation. Also, a girl age 7 years old presented with necrotising fasciitis case as a result of female genital mutilation was reported from Kassala New Hospital in eastern Sudan [27][28]. In different study assessed the knowledge and the risk factors associated with HIV among the participants attending the counselling and testing centre in Sudan, they reported that female circumcision is one of the risk factors associated with HIV [29].

Information education and communication initiative "Saleema" was launched by National Council of Child Welfare in collaboration with the UNICEF - Sudan to eradicate FGM in 2008. "Saleema" is an Arabic word means "the whole, healthy in body and mind, unharmed, pristine and perfect God-given condition" [30]. In spite of the effort made by the government, civil society organisation and UN agencies, still, the female genital mutilation is practising in Sudan. So, more efforts are needed to end this harmful phenomenon through exploiting different sources such as media, community leaders and policy stakeholders.

In conclusion, female genital mutilation is still a serious problem in Sudan not only in rural area, but also among people living in urban areas. Elimination of poverty and improvement of education level will contribute to end this harmful phenomenon. Empowerment of people and polices is highly needed and effort should made to end terrible social and cultural norms which indigenize this practice.

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