Wondimu Gudu, Mutasim Abdulahi. *Ethiop Med J, 2017, Vol. 55, No. 1*

ORIGINAL ARTICLE

LABOR, DELIVERY AND POSTPARTUM COMPLICATIONS IN NULLIPAROUS WOMEN WITH FEMALE GENITAL MUTILATION ADMITTED TO KARAMARA HOSPITAL

Wondimu Gudu MD[1*], Mutasim Abdulahi MD[1]

ABSTRACT

Objectives: *To assess labor, delivery and postpartum complications in nulliparous women with FGM/C and evaluate the attitude of mothers towards elimination of female genital mutilation.*
Methods: *A prospective hospital based study using structured questionnaire was conducted between January to March 2015 at Karamara hospital, Jijiga, Ethiopia. All nulliparous women admitted for labor and delivery were included. Data were collected regarding circumcision status, events of labor, delivery; postpartum and neonatal outcomes as well as attitude of mothers towards elimination of female genital mutilation.*
Results: *Two hundred sixty four (92.0%) of the women had female genital mutilation with most (93.0%) undergoing Type III female genital mutilation.. The mean age of the women was 22 yr. Failure to progress in 1st stage and prolonged 2nd stage of labor occurred in 165 (57.0%) and189 (65.6%) of the cases respectively. Caesarean section was performed in 17.0% and instrumental delivery in 23.0%. 64.5% required episiotomies, 83.3% had an anterior episiotomy, 29 % had perineal tears, 25.7%% experienced post-partum hemorrhage and 24% postpartum infection. Among the newborns, there were 6.4% perinatal deaths; 18.8 % low birth weight and 1.5% birth injuries. Almost all complications were more frequently seen in circumcised compared to non-circumcised women.*
Conclusions: *The prevalence of female genital mutilation is high and it substantially increases the risk of many maternal complications. Health professionals should be aware of these complications and support/care of women with female genital mutilation. should be integrated at all levels of reproductive health care provision. Capacity building of responsible health professional should be initiated in the area with intensification of female genital mutilation. eradication activities.*

Keywords: *labor, delivery and postpartum , FGM/C, Karamara Hosp. Jigjiga,*

INTRODUCTION

Female genital mutilation (FGM) is gender based violence against women and a violation of basic human rights. FGM comprises all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons (1,2). According to WHO, approximately 100–140 million girls and women worldwide have undergone some form of FGM and about 3 million girls undergo this procedure each year mainly in Africa(1). Estimated prevalence of FGM in 27 countries across Africa ranged from 98% in Somalia to less than 1% in Uganda (1,2). According to most recent data 91, 5 million girls and women above 9 years old in Africa are currently living with the consequences of female genital mutilation (1). According to the 2005 demographic and health survey (DHS), around 74% of girls and women in Ethiopia have undergone some form of FGM with wide regional differences (3). FGM associated with many immediate and late complications. A recent six -country study published by WHO in *The Lancet* has shown that women who have had female genital mutilation (FGM/C) are significantly more likely to experience difficulties during childbirth, and that the likelihood of complications increases by the extent and severity of the FGM/C (4).

[1] Department of Gynecology and Obstetrics, Karamara Regional Hospital
* Corresponding author: wondgu@yahoo.com

The most recent systematic review of the scientific literature and quantitative meta-analyses of the obstetric consequences of FGM/C was done in 2013 in Norway which included 44 primary studies involving almost 3 million participants (5). The results showed that prolonged labor, obstetric lacerations, instrumental delivery, obstetric hemorrhage, and difficult delivery are markedly associated with FGM/C, indicating that FGM/C is a factor in their occurrence and significantly increases the risk of delivery complications (5).

The only single study done in Ethiopia concluded that negative impact of FGM/C was observed more on the maternal side than on the neonatal (6). Despite many elimination efforts, FGM is still a deep rooted practice in Somali region, where the severest form of FGM (infibulation) is practiced, and nearly 97% of females are reportedly affected (3). But there are no systematic data on the obstetric complications associated with female genital mutilation in the area. The identification of labor and delivery complication in circumcised women in the Somali region where prevalence of FGM & fertility rates are high, is of paramount importance in order to devise strategies for prevention and clinical management of obstetric complications of FGM and for increasing public/ health professional awareness on the birth complications of FGM In light of the above facts a hospital based study was conducted between Jan 2015 to March 2014 to identify and describe labor and delivery complications seen in circumcised laboring women who are admitted to the labor ward of Karamara Regional Hospital. The attitude of the women towards elimination of FGM was also assessed.

General Objective: To identify labor, delivery and immediate postpartum complications in nulliparous women with FGM/C admitted to Karamara hospital
Specific objectives: To determine the incidence of labor, childbirth and postpartum complications in circumcised women. To characterize labor and delivery complications in circumcised women. To assess the attitude of women towards elimination of FGM.

PATIENTS AND METHODS

A hospital based cross sectional, descriptive study was conducted between Jan 2015 to March 2015 at Karamara hospital located in Jigjiga town of the Somali Regional State, in Eastern Ethiopia. Somali regional state is located 780 km away from the capital of Ethiopia, Addis Ababa. It is geographically and culturally close to Somalia. It has a population of around 5 million people. According to the 2008 National BeMONC base line assessment there are 5 hospitals (3 governmental) and 21 health centers involved in the provision of emergency obstetric and newborn care. Karamara hospital is the only regional hospital which also serves as the highest referral center for the region. The hospital provides an all round comprehensive emergency obstetric care with an estimated 3500 deliveries annually.

Purposive sampling was used and all 288 nulliparous women out of 1,125 mothers admitted for labor and delivery in the study period were included. The inclusion criteria were; women who are in active 1st stage/2nd stage of labor; laboring women who are conscious & willing to participate in the study. All subjects unwilling to participate in the study; mothers who are too ill to respond were excluded.

Data collection was made using pretested, structured and interviewer administered questionnaire. The questionnaire was prepared in English. For interviewing, Somali language was used. Data collectors were trained labor ward clinical and/or midwife nurses who comprehend Somali Language. An experienced nurse was employed for supervision of data collection. The questionnaire included questions on socio-economic data, data on labor and delivery complications, maternal FGM status and type; beliefs and attitudes towards the obstetric effects of FGM and towards the discontinuation of the practice. The questionnaires were attached with patients' records throughout their stay in the ward and neonatal and maternal outcomes were also recorded upon discharge of patients and on the 1st postpartum visit. Data collectors were given a 2 days training on the classification, complication of FGM and detection and management of the complications using the WHO clinical guideline on labor delivery and postpartum care in women with FGM.

Participants were given explanation about the purpose of the study. Verbal informed consent was obtained. Data was collected anonymously. Official letters were collected from the RHB of Somali regional state and the medical director office of Karamara hospital. Data collection accuracy was checked by inspector. Data was filtered, entered, and analyzed using SPSS 2002 statistical package. Proportions, means and tables were used for data summarization and presentation.

RESULTS

Magnitude of FGM & Socio-demographic Profile: The prevalence of Female Genital Cutting was 91.7%. The types of FGM/C were Type-II in 20 (7.6%) and type III in 244 (92.4%). Most of them were circumcised at the age 7(40.3%) (Range 2-9yrs). The mean age of the women was 21.8; most (32.4%) were of age 22 and 64 (22.2 %) of them were teenagers (<20yrs). All of them were Muslims and housewives; 284(98.6%) Somali; 260(90.3%) married and 204(70.8%) were illiterate (Table 1).

Table 1: Socio-demographic Characteristic of Nulliparous Women with Female Genital Mutilation, Karamara Hospital, Ethiopia, Jan 2015 - March 2015

Characteristic	Frequency	Percent
Address		
Jijiga town	132	(45.8%)
Out of Jijiga	156	(54.2%)
Age		
< 20	64	22.2 %
> 20	224	77.8 %
Marital Status		
Married	260	(90.3%)
Divorced/widowed	28	(9.7%)
Educational status		
Illiterate	204	(70.8%)
Primary school	60	(20.8%)
Secondary school	24	(8.3%)
Religion		
Muslim	288	(100%)
Ethnicity		
Somali	284	(98.6%)
Oromo	4	(1.4%)

Women's' beliefs regarding complications of FGM during labor: Two hundred twelve (73.6%) of the mothers were not having any ANC follow up. Most of the women 260(90.3%) believed FGM has a negative impact on labor and delivery and 284 (98.6%) heard that FGM is associated with complications during labor/delivery. All of the circumcised women were afraid of problems arising during labor and delivery because of their circumcision status.

Complications during labor, delivery & post partum: Problems in the first stage labor were detected in a total of 228(79.2%) of the mothers. These were failure to progress in 1st stage of labor in 165 (57.3%); mean duration of 1st stage was 10hrs; use of Pitocin (augmentation) in 141(49.0%). Other problems associated with intra-partum care were: difficulty of vaginal examination in 210(73.0%); difficulty of catheterization in 152(53.0%) and refusal of digital vaginal examination at admission in 106 (37.0%). (Table 2)

Table 2: Labor and delivery complications by female genital mutilation/cutting status in nulliparous women, Karamara Hospital, Ethiopia, Jan 2015- March 2015

Characteristics	FGM (n, %)	No FGM (n, %)
difficulty of vaginal exam	205 (77.7%)	5 (22.3%)
difficulty of catheterization	150 (56.8%)	2 (8.3%)
Poor progress in 1st stage	160 (60.6%)	5 (22.3%)
use of pitocin	131 (49.6%)	10 (41.7%)
delayed 2nd stage	179 (67.8%)	10 (41.7%)
anterior episiotomy	240 (83.3%)	0
Postero-lateral episiotomy	173 (65.5%)	13 (54.2%)
Perineal tear (spontaneous)	82 (31.1%)	2 (8.3%)
Instrumental delivery	66 (25.0%)	1 (4.2%)
Cesarean section	45 (17.0%)	3 (12.5%)

The mean duration of the 2nd stage was 2hrs and delayed 2nd stage was noted in 189(66 %). Two hundred forty (83.0%) of the parturients, all with type III FGM, needed an anterior episiotomy (defibulation) to facilitate delivery. Postero-lateral episiotomy was done in 186 (64.6%). Eighty four (29.0%) developed spontaneous perineal tears. The mode of delivery was vaginal in 173(60.0%); instrumental in 67 (23.0%) and cesarean in 48(17.0%).

Postpartum complications were detected in 112 (39%) of the mothers. post partum haemorrhage in 74(25.7%); Postpartum genital infections in 69 (24%) and postpartum psychological disturbance in 35(12%). There were 120(42%) fetal/neonatal complications. Perinatal asphyxia) in 62(21.0%); birth injuries in 4(0.7%); perinatal deaths in 18(6%); need for resuscitation in 95(33%) and low birth weight in 54(19.0%). Comparison of complications among the circumcised and uncircumcised women was done as summarized in Table3. Almost all complications were more frequently seen in circumcised compared to non-circumcised women except low birth weight. The biggest difference between the two groups were seen for: failure to progress in 1st stage (61%V22%); delayed second stage (69% V42%); need for anterior episiotomy (83%V 0); perineal tears (31%v8%); instrumental delivery (24% V 4%); postpartum hemorrhage (27%V8%); postpartum infections (14%v 4%); and birth injuries (1.5% V0).

Table 3: Post partum and neonatal complications by female genital mutilation/cutting status in nulliparous women, Karamara Hospital, Ethiopia, Jan 2015 - March 2015

Characteristics	FGM (n, %)	No FGM (n, %)
Post partum hemorrhage	72 (27.2)	72 (27.2)
Post partum Infections	38 (14.4%)	38 (14.4%)
Perinatal asphyxia	60 (22.7%)	60 (22.7%)
Low birth weight	49 (18.6%)	49 (18.6%)
Birth injuries	4 (1.5%)	4 (1.5%)
Still birth/ENND	17 (6.4%)	17 (6.4%)

Attitude/practice towards discontinuation of FGM/C: Attitude towards the discontinuation of FGM was assessed in the study and most (67%) were against the continuation of the practice. Two hundred thirty six (82%) of the women had at least one family member circumcised and 92(32%) women said they will circumcise their daughters in the future (Table 3). Only 32(12.1%) of the women have undergone defibulation (correction of infibulation) and most (88.2%) have the procedure done just after marriage. None of the mothers had the correction done during pregnancy.

Table 4 : Attitude & practice of women towards female genital mutilation/cutting status in nulliparous women, Karamara Hospital, Ethiopia, Jan 2015 - March 2015

Attitude/practice	Frequency	Percent
Women having at least one family younger member circumcised	236	82%
Intention to circumcise daughters in the future	92	32%
Support towards elimination of FGM	193	67%

DISCUSSION

The prevalence of Female Genital Cutting (92.0%) in this study is comparable to that of the report in DHS 2005 (97%) (3); but it is strikingly higher than reports in other similar settings suggesting that the practice is still deep routed in the society (6-9). Our result contradicts the change in practice of FGM from infibulation to less sever forms of FGM (Sunni) reported in some studies as most (92.0%) have undergone infibulation (type III FGM/C). This shows that large scale hospital based studies focused on objective evaluation of circumcision status are needed as most reports of shift in practice of FGM/C were based on self-reported circumcision status. But another possible explanation is that the shift of practice might have started recently and it was not seen in this study which included only reproductive age women who were most likely circumcised before eradication efforts were initiated.

Most (74%) of the women didn't have any ANC attendance but most (98.6%) of them have heard about the complications of FGM/C during labor/ delivery and were afraid of these complications. But only 32(12.1%) of them have undergone defibulation (reversal of infibulation) and all of them had it after marriage. This might suggest that women with FGM don't have the knowledge where to get the services and the maternal health service provision is not comprehensive enough to address individual needs of those women who have undergone FGM in whom correction of FGM could have been done pre-pregnancy or earlier during pregnancy. There might also be sociocultural factors which could affect individuals' decision & health care seeking for correction of infibulation despite having negative attitude towards the effect of FGM on childbirth. Hence all factors associated with delay/failure in seeking medical care for the management of FGM and its complications should be addressed in future studies.

The incidence of complications in this study was comparable to many previous reports in similar settings (7-10). In this study, deliveries to women who have undergone FGM/C are more likely to be complicated by prolonged labor, perineal tears/ lacerations, anterior episiotomy, instrumental delivery, obstetric hemorrhage, birth injuries and postpartum infections than deliveries by comparable women who have not had FGM/C. Generally the complication rates in this study were higher than most previous reports which could be explained by the very high (92%) prevalence of the severest form of FGM (infibulation). It is to be noted that only nullipara women were included in the study because ascertainment of circumcision status & determination of complications rate would be made more reliably. Multiparous women were not included for they might undergo defibulation in previous delivery which may bias the determination FGM status and the rate of its complications.

The first stage abnormality (poor progress of labor) seen in 61.0% of the mothers with FGM compared to the 22% without FGM/C in the study was much higher. This was also higher than reports included in the meta-analyses which ranged from 2% to 43%. (5). although there is no convincing scientific reason why FGM leads to first stage abnormalities; the psyche is one of the factors in the 4 'P's of dystocia. Most mothers in the study were afraid of complications which might have contributed to poor progress in labor. The significantly high rate of difficulty in catheterization (57%) and difficult vaginal examination (78%) posed by FGM compromises the quality of intra-partum care and incurs unnecessary pain which should not also be ignored.

Most women with FGM/C (66%) had prolonged 2nd stage which was higher than the rate in women without FGM (42%). This could be explained by inelasticity of vulvar scar tissue leading to soft tissue dystocia. This is even more pronounced as most women have undergone infibulation. Our finding is comparable to most reports (5-7),(10) except a study from Sweden (which involved only nulliparous women) which found patients with FGM had a significantly shorter second-stage of labor and a lower risk of prolonged labor (11).

The fact that the instrumental delivery rate (25%) was much higher in women with FGM compared to those without FGM (4%) is explained by the higher rate of prolonged second stage in women with FGM which is an indication for assisted vaginal deliveries. The difference in Caesarean rate between circumcised and uncircumcised women (17%V12.5 %) was not striking. Our finding is the same as the study in Nigeria which involved nullipara women (7) and a Ghanaian study (9). But the rate of caesarean section might be underestimated in our study because of the general tendency of many Somali women preferring vaginal delivery and refusing cesarean delivery despite clear indications which was also seen in a study involving migrant Somali women in Europe(10). Although the rate of CS in other case-control studies from Europe and USA comparing Somali-born with native women, was significantly higher among the circumcised women (10,12-14) it was not seen in the biggest meta-analysis (6).

The rate of episiotomy (66% V 54% for those with and without FGM respectively) was comparable in both groups and it was not higher than the generally accepted rate of 39% to 88% which varies between centers (6). But it was higher than the 39% rate reported by Hakim Y. in a study done in the same country (Ethiopia)(6). The Anterior episiotomy (defibulation) rate was very high (83.3%) which implies that infibulation is associated with narrow introitus necessitating surgical incision which is traumatizing to laboring women who may additionally need postero-lateral episiotomy to effect delivery. The perineal laceration rate of 31.0% in circumcised women in our study is much higher than the 14% rate reported by Hakim Y in the same country (6) and all other reports (3% to 21%) (5). The increased risk of obstetric lacerations can be explained by the increased inelasticity of vulvar scar tissue and poor tensile strength which is liable for tear.

The rate of PPH (27%) in women with FGM/C in our study was higher than most reports included in the largest systematic review which ranged from 2.9 to 30% (5). the risk of obstetric hemorrhage was much higher in women with FGM (27%) compared to those without FGM (18%). The higher rate of PPH could be attributed to increased bleeding from high rate of lacerations, uterine atony and instrumental deliveries. The Post-partum genital infection rate of 14% in women with FGM has never been reported previously. The incidence in the single Ethiopian study was 8% (6). In the WHO collaborative study and the other biggest systematic review the reported incidences vary from 0.2% to 8% (4,5). But in our study, there might be other confounding risk factors predisposing the patients for infection other than circumcision status.

In contrast to many other African studies, the only perinatal complication which was significantly associated with FGM/C status was birth injury (7-9). But our findings are in agreement with that of the conclusion made by the WHO collaborative study in which neonatal complication were not found to be significantly associated with FGM/C status (4). Since 2nd stage of labor was significantly prolonged in circumcised women more perinatal asphyxia would have been expected with corresponding increase in perinatal mortality. But the relatively small number of controls (uncircumcised women) used in the study might be the reason why the expected neonatal complications were not significantly higher. Another possible explanation for lack of association between circumcision status and perinatal deaths may be an improved neonatal care in the hospital as it is a center for basic emergency maternal and newborn care training.

The frequency of complications seen in this study may not be true reflection of the picture in circumcised women in the general population as most of the pregnant women don't deliver at health facilities. This is evidenced by the DHS 2011 report of low institutional delivery rate in the area (6.5%) (15). This suggests there may be many women with FGM/C who deliver at home suffering possibly many obstetric complications. Additionally, postpartum complications might have been under reported because women who deliver at home and present to the hospital with complications were not included in the study.

Most (67%) of the mothers were against the continuation of the practice of FGM/C. this was comparable to similar study done in Ethiopia where 74 % were in favor of discontinuation of FGM (16). Only one third of the mothers had the intension to circumcise their daughter. Despite these facts, the prevalence of FGM is still high in the community. This can be explained by social desirability bias in mothers' response to the question or it might be that women's' response was influenced by the fact that practicing FGM is punishable by law. Since the practice of FGM/C is intricate; individuals' attitudes might be affected by other factors (sociocultural, geographic, economic, and institutional) that lead to perpetuation of the practice. Hence all factors affecting the attitude/practice of the community towards FGM should be assessed by large scale study so as to devise community specific elimination strategies.

Conclusions/Recommendations: The practice of FGM is still deep routed in the study area and most women are in favor of discontinuation of the practice. Hence community specific preventive efforts based on scientific data should be intensified. FGM/C is associated with significant labor, delivery and postnatal complications. Hence clinical care and support of FGM victims should be integrated at all levels and sectors of health care provision and capacity building of the responsible health professionals in the management and prevention of FGM and its complications should be initiated. Further well designed large scale studies are recommended.

ACKNOWLEDGEMENT

We pass our deepest gratitude to Dr. Yayehyirad Kitaw and Dr. Solomon Kumbi for their constructive comments on the draft manuscript.

REFERENCES

1. World Health Organization eliminating female genital mutilation: an interagency statement UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCHR, UNHCR, UNICEF, UNIFEM, WHO Geneva, Switzerland. 2008.
2. World Health Organization, Female Genital Mutilation: a joint WHO/UNICEF/UNFPA statement WHO, Geneva, Switzerland 1997.
3. Central Statistical Agency [Ethiopia] and ORC Macro Ethiopia Demographic and Health Survey 2005. CSA; Addis Ababa, Ethiopia and Calverton, Maryland, USA; 2006.
4. Banks E, Meirik O, Farley T, Akande O, Bathija H, Ali M. Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries. Lancet. 2006;367:1835–41.
5. Berg RC, Under land V. Obstetric consequences of female genital mutilation/cutting (FGM/C). Report from Kunnskapssenteret no. 6–2013. Oslo: Norwegian Knowledge Centre for the Health Services, 2013.
6. Hakim LY. Impact of female genital mutilation on maternal and neonatal outcomes during parturition. East Afr Med J 2001; 8:2558.
7. Slanger T, Snow R, Okonofua F. The impact of female genital cutting on first delivery in Southwest Nigeria," *Studies in Family Planning 2002*;33(2):173–84.
8. Ndlaye P, Diongue A. Faye D, Ouedraogo A, Dia T. Female genital mutilation and complications in childbirth in the province of Gourma (Burkina Faso)," *Sante Publique* 2010;22:5; 563–70
9. Oduro A, Ansah P, Hodgson A, et al. Trends in the prevalence of female genital mutilation and its effect on delivery outcomes in the Kassena-Nankana district of Northern Ghana," *Ghana Medical Journal; 2006;*40 (3):87–92
10. Small R, Gagnon A, Gissler M, et al., Somali women and their pregnancy outcomes postmigration: data from six receiving countries," BJOG: Intern J Obstetr Gynaecol 2008;115:13. 1630–40.
11. Essen B, Sjo¨ berg N, Gudmundsson S, O¨ stergren P, Lindquist P. No association between female circumcision and prolonged labour: a case control study of immigrant women giving birth in Sweden. Eur J Obstet Gynecol Reprod Biol 2005;121:182–5.
12. Wuest S ,et al. Effects of female genital mutilation on birth outcomes in Switzerland. BJOG 2009;116:1204–9.
13. Johnson EB, Reed SD, Hitti J, Batra M. Increased risk of adverse pregnancy outcome among Somali immigrants in Washington state. American Journal of Obstetrics and Gynecology 2005;193:475-82.
14. Chalmers B, Hashi KO. 432 Somali women's birth experiences in Canada after earlier female genital mutilation. Birth: Issues in Perinatal Care 2000 Dec;27(4):227-34.
15. Central Statistical Agency [Ethiopia] and ORC Macro Ethiopia Demographic and Health Survey 2005. CSA; Addis Ababa, Ethiopia and Calverton, Maryland, USA; 2012.
16. Masho S, Matthews L: factors determining whether Ethiopian women support continuation of Female Genital Mutilation Health. Intern Obster Gynecol 2009;107:232-5.