

Assessment of complications associated with female genital cutting among postnatal women in Chuko Primary Hospital, Sidama region, Southern Ethiopia

SAGE Open Medicine

Volume 11: 1–7

© The Author(s) 2023

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/20503121221144243

journals.sagepub.com/home/smoYirgalem Yosef¹ , Abebe Borsamo² and Seblework Abeje³ 

Abstract

Objectives: Female genital cutting is a genital operation for a nonmedical reason and involves the cutting away of a part or whole of the female external genitals. Postnatal women with genital cutting could be more vulnerable to circumcision-associated birth complications, and it is still a major health problem during childbirth and the postnatal period in Ethiopia. This study aimed to assess complications associated with female genital cutting among postnatal women in Chuko Primary Hospital, Sidama region, Southern Ethiopia.

Methods: An institutional-based quantitative cross-sectional study design was conducted from 01 May 2021 to 15 June 2021. A systematic random sampling technique was used to select study participants. Data were collected by using a structured pretested questionnaire and reviewing medical records. The data were analyzed using SPSS version 23.0. Logistic regression analysis was computed to identify birth complications associated with female genital cutting from independent variables, and significance was declared at $p < 0.05$ with 95% CI.

Results: The proportion of female genital cutting among the participants was 76.8% (95% confidence interval: 71.1, 81.2). Prolonged labor and birth asphyxia were statistically significant female genital cutting-associated birth complications.

Conclusion: This study revealed a high proportion of complications associated with female genital cutting. Birth complications such as prolonged labor and birth asphyxia have a statistically significant association with it. Illiteracy and early marriage were the predominant reasons for female genital cutting. Therefore, healthcare providers should educate the rural communities to prevent early marriage and female genital cutting to prevent its complications.

Keywords

Female genital cutting, circumcision, birth complication, postnatal women, Ethiopia

Date received: 6 December, 2021; accepted: 22 November, 2022

Introduction

Female genital cutting/circumcision (FGC/C) is defined as a surgical procedure that manipulates young girls' and women's external genitalia for cultural or nontherapeutic reasons.^{1,2} According to the World Health Organization (WHO), FGC/C is classified into different types. It involves clitoridectomy, excision, infibulation, pricking, piercing, incising, scraping, and cauterizing the genital area.³

FGC can be performed during infancy, childhood, adolescence, at the time of marriage, or during the first pregnancy.⁴ It is performed for cultural purposes to preserve virginity, marriageability, and religious acceptance.^{5–7} It is often considered as a harmful traditional practice detrimental to the

health of the female gender and a form of discrimination or violence against girls and women.⁸

According to the WHO report, more than 200 million women's genitals are mutilated in Africa, Asia, and the Middle

¹Department of Midwifery, College of Health Science, Wolkite University, Wolkite, Ethiopia

²School of Medicine, College of Health Science, Dilla University, Dilla, Ethiopia

³Department of Biochemistry, College of Health Science, Wolkite University, Wolkite, Ethiopia

Corresponding author:

Yirgalem Yosef, Department of Midwifery, College of Health Science, Wolkite University, Wolkite, 07, Ethiopia.

Email: Yirgalm.yosef@wku.edu.et



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons

Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

East.³ The United Nations (UN) report revealed that 80% of reported cases are found in Africa.⁹ Studies showed that in Africa one to two babies die per 100 deliveries due to FGC-associated birth complications.^{10,11} In Ethiopia's context, a systematic review and meta-analysis studies have shown high prevalence of FGC/C between 77% and 87.5%.¹²⁻¹⁴

Women with FGC/C were confronted with mechanical obstruction, prolonged labor, fetal distress, perianal tear, wound infection, and fistula during childbirth.^{11,15-17} Postnatal women with FGM could be more vulnerable to circumcision-associated birth complications, and it is still a major health problem during childbirth and the postnatal period in Ethiopia. Excess vaginal bleeding, wound infection, and neonatal distress have been commonly reported in the course of postnatal period, which may also cause maternal and neonatal morbidity and mortality.^{10,16} Even though, highly prevalent FGC is in the study area, reliable evidence of the associated birth complications among postnatal women is rare. Therefore, the purposes of this study were to assess complications associated with FGC among postnatal women and establish baseline information for the future implementation of any plan of action.

Methods and materials

Study area and study period

Aleta Chuko is one of the woredas in the Sidama region of Ethiopia. Aleta Chuko is bordered on the south by Dara, on the southwest by Oromia region, on the west by Loka Abaya on the north by Dale, and on the east by Aleta Wendo. The administrative center is Chuko, a town which is located 315 km from Addis Ababa, the capital city of Ethiopia, and 76 km from Hawassa, the capital city of the Sidama region. In a total population of 22,953, 13,788 were female and 5701 were reproductive-age women¹⁸ served by hospitals per year. The pooled prevalence range of FGM in Ethiopia was 74%–85%.¹¹

Study design

An institutional-based quantitative cross-sectional study design was conducted.

Population

Source of population: All postnatal (15–49 years old) women who registered in the labor and delivery logbook at Chuko Primary Hospital during the study period were the source of population.

Inclusion and exclusion criteria

Inclusion criteria: All sampled postnatal (15–49 years old) women who gave birth in Chuko Primary Hospital were included in the study.

Exclusion criteria: Critically ill and involuntary women during the data collection were excluded from the study.

Sample size determination and sampling technique

The minimum sample size required for the study was determined by using a single population proportion formula $n = \frac{(Z\alpha/2)2p(1-p)}{d^2}$ with a 0.05 margin of error (d), a 95% confidence interval (CI); 82% estimated proportion of mothers had FGC during pregnancy from a related study in Hadiya zone, Southern Ethiopia.¹⁹ Thus, after adding a 10% nonresponse rate, a final sample size of 250 participants was considered for this study.

The lists of postnatal women were obtained from the postnatal registration logbook. From 301 eligible women, 250 study participants were selected using a systematic random sampling technique. The skipping interval (K-value) was determined by dividing the number of units in the population ($N=381$) by the desired sample size ($n=250$), which was 1.524. Then, the first respondent was selected by lottery method, and subsequent respondents were selected by every other interval.

Data collection procedures (Instrument, Personnel, Data Quality Control)

Data collection instruments: The data collection tool was prepared in English after reviewing related literature and then translated into the Amharic language (16, 17). The questionnaire consisted of sociodemographic variables, obstetrics characteristics, and postnatal complications. Data were collected using a pretested structured interviewer-administered questionnaire from patients and patients' cards were also reviewed (Annex 1). *To assure the quality of data:* Two experienced graduate midwives were trained for data collection and two graduate midwives were assigned as supervisors under the supervision of the principal investigator. The training was provided to data collectors and supervisors regarding data collection techniques, data validity, and ethical considerations. The prepared questionnaire was pretested on 5% ($n=5$) of the sample size and adjustments were made based on the findings. Each questionnaire was coded with a unique identification number. Filled questionnaires were checked daily for completeness and consistency. The reliability of the questionnaire was checked by Cronbach's alpha value, which was 0.79.¹⁹

Operational definitions

FGC/C: In this study, a woman who has any surgical modification involving partial or total removal of the external genitalia was considered. Types of FGC/C: *No FGM: no evidence of any genital mutilation; FGM I: excision of the prepuce,*

with or without excision of part or the entire clitoris; FGM II: excision of the clitoris with partial or total removal of the labia minora; and FGM III: excision of part or all of the external genitalia and stitching or narrowing of the vaginal opening (infibulation).¹

Postpartum hemorrhage (PPH): A woman who had blood loss of ≥ 500 ml following vaginal childbirth or ≥ 1000 ml following cesarean childbirth was considered as postpartum hemorrhage.²⁰ *Episiotomy*: An episiotomy is a minor incision made during childbirth to widen the opening of the vagina.²¹ *Apgar score*: The Apgar score is a test to assess newborns soon after birth. A score of 7–10 after 5 min is “normal.” A score below 6 is considered “abnormal.”²²

Statistical analysis

Data entry, cleaning, and screening were done exclusively by the principal investigator and coinvestigators. The edited and cleaned data were entered into EpiData version 3.1 and exported to SPSS version 23 for analysis. Descriptive statistics were performed using frequency tables, measures of central tendency, and cross-tabulation. Logistic regression analysis was computed to identify complications associated with FCG. The fitness of the model was checked by the Hosmer–Lemeshow tests.²³ Variables with a *p*-value of less than 0.25 in the bivariate logistic regression analysis were selected for multivariable logistic regression analysis. Finally, significance was declared at $p < 0.05$ with 95% CI.

Results

Sociodemographic characteristics

A total of 250 participants were involved in the study with a response rate of 100%. The mean age of participants was 22.48 ± 5.03 years and 43.6% ($n=109$) of participants were aged between 25 and 29 years. Of the study participants, 69.6% ($n=174$) were from rural areas. Four-fifth, 82.8% ($n=207$) of study participants, were married. More than half, 52.0% ($n=130$) of the study participants, were illiterate. One-third, 36.7% ($n=99$) of the study participants, were housewives. Nearly half, 47.6% ($n=119$) of the study participants, had 500–1000 EB on average. Almost two-thirds, 62.2% ($n=168$) of the study participants, had 1–3 family members on average (Table 1).

Obstetric characteristics of the study participants

Among the study participants, 50.8% ($n=127$) had Gravida two to four on average, followed by Gravida 1 in 35.2% ($n=88$) (Table 2).

Postnatal maternal and newborn complications

Among the study participants, 58.0% ($n=145$) had an episiotomy, 34% ($n=85$) had prolonged labor, 3.2% ($n=8$) had perineal infection, 7.2% ($n=18$) had given birth by cesarean section, and 6.8% ($n=16$) had PPH during childbirth. More

Table 1. Sociodemographic characteristics of study participants in Chuko Primary Hospital, Sidama region, Southern Ethiopia ($n=250$).

Variables	Frequency	Percent
Age		
15–19 years	94	37.6
20–24 years	27	10.8
25–29 years	109	43.6
30–34 years	15	6.0
35 years and above	5	2.0
Total	250	100
Religion		
Orthodox	80	32.
Protestant	119	47.6
Muslim	47	18.8
Other	4	1.6
Total	250	100
Ethnicity		
Sidama	150	60
Amhara	22	8.8
Gurage	70	28
Other	8	3.2
Total	250	100
Marital status		
Single	21	8.4
Married	207	82.8
Divorced	22	8.8
Total	250	100
Educational status		
Illiterate	130	52.0
Can read and write	60	24.0
Primary school	25	10.0
Secondary school	21	8.4
College and above	14	5.6
Total	250	100
Occupational status		
Housewife	99	36.7
Civil servant	52	19.3
Merchant	57	21.1
Student	29	10.7
Daily labor	13	4.8
Total	250	100
Family income per month		
<500 EB	11	4.4
500–1000 EB	119	47.6
1001–1500 EB	99	39.6
>1500 EB	21	8.4
Total	250	100
Family size		
<4	168	62.2
4 and above	82	30.4
Total	250	100
Age at marriage		
14–19 years	80	29.6
20–24 years	123	45.6
25–29 years	30	11.1
Other	17	6.3
Total	250	100

EB: Ethiopian Birr.

Table 2. Obstetric characteristics of the study participants in Chuko Primary Hospital, Sidama region, Southern Ethiopia ($n=250$).

Variables	Frequency	Percent
Gravidity		
Only one	88	35.2
2–4	131	52.4
5 and above	31	12.4
Total	250	100
Parity		
<2	88	35.2
2–4	127	50.8
5 and above	35	14.0
Total	250	100
Number of living children		
<4	171	68.4
4–7	59	23.6
7 and above	20	8.0
Total	250	100

than two-fifths, 42% ($n=105$) of the respondents' babies developed neonatal complications. Asphyxia (37.6%, $n=94$) and low birth weight (13.6%, $n=34$) were commonly observed neonatal complications (Table 3).

Female genital cutting

Of the study participants, 76.8% ($n=152$) had been circumcised (FGC). Among circumcised women, 57.8% ($n=111$) had type I, 33.9% ($n=65$) type II, and 8.3% ($n=16$) type III. All circumcision procedure was carried out with the aid of a traditional birth attendant (TBA). Among women who had FGC, 58.8% ($n=147$) were circumcised in less than 10 years (Figure 1).

Complications associated with FGC

On bivariate analysis, an episiotomy, prolonged labor, and birth asphyxia were candidates for multivariate analysis. On multivariate analysis, prolonged labor and birth asphyxia were statistically significant in the final model (Table 4).

This study revealed that the odds of having birth asphyxia among mothers who had FGC were two times (AOR=1.6; 95% CI: 0.03, 0.82) more likely compared with those who had no FGC. On the other hand, odds of having prolonged labor among mothers who had FGC were two times (AOR=1.52; 95% CI: 0.03, 0.82) more likely compared with those who had no FGC.

Discussions

This study was intended to *assess the complications associated with FGC among postnatal women*.

In this study, the proportion of FGC among postnatal women was 192 (76.8%) higher than in the study conducted

Table 3. Female genital cutting and maternal and newborn complications of the study participants in Chuko Primary Hospital, Sidama region, Southern Ethiopia ($n=250$).

Variables	Frequency	Percent
FGC		
Yes	192	76.8
No	58	23.2
Types of genital cutting		
FGM I	111	57.8
FGM II	65	33.9
FGM III	16	8.3
Total	192	100
Maternal complications		
Yes	179	71.9
No	70	28.1
Episiotomy		
Yes	145	58.0
No	105	42.0
Prolonged labor		
Yes	85	34
No	165	66%
Instrumental delivery		
Yes	7	2.8
No	243	97.2
Cesarean section		
Yes	18	7.2
No	232	92.8
Retained placenta		
Yes	5	2.0
No	245	98.0
Perineal infection		
Yes	8	3.2
No	242	96.8
PPH		
Yes	16	6.8
No	234	93.2
Newborn complications		
Yes	105	42.0
No	145	58.0
Asphyxia		
Yes	94	37.6
No	156	62.4
Low birth weight		
Yes	34	13.6
No	215	86.0
Preterm baby		
Yes	14	5.6
No	236	94.4
Neonatal death		
Yes	7	2.8
No	243	97.2

in the Keras district and in Sierra Leone.^{13,24} However, it was lower than the study conducted in the Hadiya zone, Wolayita zone, Jigjiga district, and systematic review and

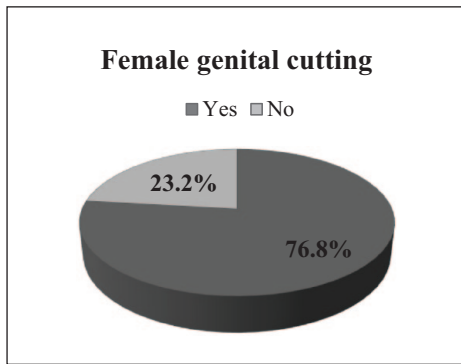


Figure 1. Magnitudes of female genital cutting of the study participants in Chuko Primary Hospital, Sidama region, Southern Ethiopia ($n=250$).

meta-analysis.^{12,13,19,25,26} The reason behind this difference may be the area where the study was conducted and the sample size. This study was carried out in a rural primary hospital with a small sample size. Another reason might be the educational status of the respondents. In this study more than half of the respondents were illiterates.

In the current study, women with FGC/C were more likely to have episiotomy when compared with uncircumcised women. The finding of this study was consistent with studies carried out in the Hadiya zone and a short literature review in which women who had circumcision were more likely to have an episiotomy during childbirth when compared with uncircumcised women.^{19,27} The possible reason behind this difference may be tight perineum due to scar of genital cutting among respondents.

Table 4. Bivariate analysis of the female genital cutting and associated complications among postnatal women in Chuko Primary Hospital, Sidama region, Southern Ethiopia ($n=250$).

Variables	Female genital cutting		COR (95% CI)	AOR (95% CI)	p-Values
	Yes (%)	No (%)			
Episiotomy					
Yes	139 (95.9)	6 (4.1)	22.7 (9.22, 56)	7.3 (0.23, 23)	0.001
No (Ref)	53 (50.5)	52 (49.5)			
Prolonged labor					
Yes	75 (88.2)	10 (11.8)	3.08 (1.47, 6.5)	1.52 (0.03, 0.82)	0.0001**
No (Ref)	117 (70.9)	48 (29.1)			
Instrumental delivery					
Yes	5 (71.4)	2 (28.6)	0.75 (0.2, 4.0)		
No (Ref)	187 (77.0)	56 (23.0)			
Cesarean section					
Yes	13 (72.2)	5 (27.8)	0.7 (0.3, 2.26)		
No (Ref)	179 (77.2)	53 (22.8)			
Perineal infection					
Yes	6 (71.4)	2 (28.6)	0.75 (0.1, 1.3)		
No (Ref)	187 (77.0)	55 (23.0)			
Retained placenta					
Yes	4 (80.0)	1 (20.0)	1.2 (0.13, 11.1)		
No	188 (76.7)	57 (23.3)			
PPH					
Yes (Ref)	10 (62.5)	6 (37.5)	0.48 (0.17, 1.4)		
No	182 (77.8)	52 (22.2)			
Birth asphyxia					
Yes	84 (90.7)	10 (9.3)	3.8 (1.9, 7.8)	1.6 (0.03, 0.82)	0.019*
No (Ref)	107 (68.0)	49 (32.0)			
Low birth weight					
Yes	27 (79.4)	7 (20.6)	1.2 (0.5, 2.9)		
No (Ref)	165 (76.4)	51 (23.6)			
Preterm baby					
Yes	11 (78.6)	3 (21.4)	1.12 (0.3, 4.14)		
No (Ref)	181 (76.7)	55 (23.3)			
Neonatal death					
Yes	5 (71.4)	2 (28.6)	0.749 (0.14, 3.9)		
No (Ref)	187 (77.0)	56 (23.0)			

COR: Crude Odd Ratio; AOR: Adjusted Odd Ratio. Significant at *p-value <0.05, and **p-value <0.01.

This study also showed that women who had FGC/circumcision were more likely to have prolonged labor when compared with uncircumcised women. This result is comparable with a study conducted in the Hadiya zone, Kersa district, the Bale zone, and a systematic review and meta-analysis.^{11,15,19,24} The possible reason behind this difference may be the age of the respondents. In this study, nearly half of the respondents were below 25 years. The other reason may be a tight perineum scar; giving birth at an early age and circumcision scar could decrease the elasticity of the perineum.

This study also revealed that newborn babies from FGC/circumcised mothers were more likely to have birth asphyxia when compared with the newborn baby from uncircumcised mothers. This result is comparable with the study conducted in the Bale zone and a short literature review.^{15,27} This reflects that circumcision scar decrease the elasticity of the perineum which increases the probability of birth asphyxia for newborn babies. The difference might be due to sampling size and study area; this study was carried out in a rural primary hospital with a small sample size. In rural areas, the acceptance of female genital cutting is high when compared with the urban community due to low awareness and sociocultural effects.

This study revealed that FGC is typically associated with early marriage among respondents which might be related to the educational status of women. Uneducated women were more likely to have FGC/circumcision and early marriage when compared with their educated counterparts. FGC/circumcision has immediate and long-term effects on women and newborn babies. Those effects could be physical like the formation of a keloid scar, infection, and hemorrhage as well as psychosocial.²⁸

Strengths and limitations of the study

Strengths of the study

- The study was carried out in the primary hospital in a rural area.
- Data collectors were experts who had been on their activities in the study place which could appreciably minimize errors in data collection.
- Bivariate logistic regression analyses were used to see the statistically significant association of an independent variable over the outcome variable.

Limitations of the study

- This study employed quantitative study design, so some imperative qualitative data about FGC were not explored deeply.
- The nature of the cross-sectional study did not show cause and effect relations among variables.

Conclusion

This study revealed a high proportion of complications associated with FGC. Birth complications such as prolonged labor and asphyxia have a statistically significant association with FGC. Since, the proportion of FGC and early marriage is not prevented, it can be a cause of maternal and newborn complications during the postnatal period. Illiteracy and early marriage had been the predominant reasons for FGC. Therefore, healthcare providers should educate the rural communities to stop early marriage and FGC to prevent its complications.

Acknowledgements

We Dilla University, Aleta Chuko woreda health bureau, and Chuko Primary Hospital are the institutions that need to be indispensably recognized for their role in accomplishment of this research. Midwives in Chuko Hospital and colleagues have participated in the overall process. Finally, sincere appreciation and grateful acknowledgement goes to the respondents and data collectors.

Author contributions

All authors have substantial contributions to conception; design; acquisition, analysis, and interpretation of data; drafting and revising of the article critically, for important intellectual content; and the approval of the final version of this article.

Availability of data and materials

The datasets generated and/or analyzed during the current study are not publicly available as consent for the sharing of this data.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics approval

Ethical clearance was obtained from the institutional review board of Dilla University with the reference number M/S/963/2012.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Informed consent

A permission letter was obtained from Chuko Primary Hospital authorities. Participation in the study was voluntary and written informed consent was obtained from mothers, and for those below 18 years old, was obtained from their parents. All the information taken from the study participants was kept confidential.

ORCID iDs

Yirgalem Yosef  <https://orcid.org/0000-0002-3757-2163>

Seblework Abeje  <https://orcid.org/0000-0002-1096-5848>

Supplemental material

Supplemental material for this article is available online.

References

1. WHO. Eliminating female genital mutilation: An interagency statement, <https://www.unfpa.org/publications/eliminating-female-genital-mutilation-interagency-statement> (2008, accessed 10 January 2021).
2. Elduma AH. Female genital mutilation in Sudan. *Open Access Maced J Med Sci* 2018; 6(2): 430–434.
3. WHO. Female genital mutilation evidence brief, <https://apps.who.int/iris/bitstream/handle/10665/329885/WHO-RHR-19.19-eng.pdf?ua=1> (2019, accessed 10 January 2021).
4. Hakim L. Impacts of Female genital Mutilation on maternal and neonatal outcome during parturition. *East Afr Med J* 2001; 78(5): 255–258.
5. Odukogbe A-TA, Afolabi BB, Bello OO, et al. Female genital mutilation/cutting in Africa. *Transl Androl Urol* 2017; 6(2): 138–148.
6. WHO. Female genital mutilation technical report, <https://apps.who.int/iris/handle/10665/63602> (1995, accessed 10 January 2021).
7. WHO. *Understanding and addressing violence against women*. Geneva: WHO, 2012.
8. WHO. Female genital mutilation, <https://www.who.int/news-room/fact-sheets/detail/female-genital-mutilation> (2020, accessed 10 January 2021).
9. UN. Eighty percent of FGM cases happen in Africa, 2021, <https://reliefweb.int/report/world/eighty-cent-fgm-cases-happen-africa>.
10. WHO. Effects of female genital mutilation on childbirth in Africa. *Reproductive Health and Research* 2006; 1835–1841. Available at: https://www.who.int/reproductivehealth/publications/fgm/effect_of_fgm_on_childbirth_africa.pdf. Accessed 367.
11. WHO/FCH/WMH/. A systematic review and meta-analysis of the consequences of female genital mutilation on maternal and perinatal health outcomes in European and African countries, <https://gh.bmj.com/content/5/12/e003307> (2020, accessed 11 January 2021).
12. Outlaw D, Seyoum K and Gezahegn H. Prevalence of female genital mutilation among reproductive age women in Ethiopia: systematic review and meta-analysis. *Heliyon* 2020; 6(7): e04403.
13. Asmamaw A, Kidanemariam A and Mullu G. Prevalence of female genital mutilation in Ethiopia: a systematic review and meta-analysis. *Ethiop J Reprod Health*, 2020; 12(2): 40–58.
14. Fite RO, Hanford LK and Lake EA. Prevalence of female genital mutilation among women in Ethiopia: A systematic review and meta-analysis. *Heliyon*, 2020; 6(7): e04403.
15. Zenebe Fikrie B, MSc. Factors associated with perceived continuation of females' genital mutilation among women in Ethiopia. *Ethiop J Health Sci* 2010; 20: 49–53.
16. WHO Study Group On Female Genital Mutilation and Obstetric Outcome; Banks E, Meirik O, Farley T, et al. Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries. *Lancet* 2006; 367(9525): 1835–1841.
17. De Silva S. Obstetric sequelae of female circumcision. *Eur J Obstetr Gynecol Reprod Biol* 1989; 32(3): 233–240.
18. ICF CSACEa. *Ethiopia demographic and health survey 2016*. Addis Ababa, Ethiopia, and Rockville, MA: CSA and ICF. 2016; <https://dhsprogram.com/pubs/pdf/FR328/FR328.pdf>.
19. Tamir M and Molla M. Prevalence and belief in the continuation of female genital cutting among high school girls: a cross-sectional study in Hadiya zone, Southern Ethiopia. *Macedonian J Med Sci* 2013; 13: 316–317.
20. WHO. Guidelines for the management of postpartum hemorrhage and retained placenta, <https://apps.who.int/iris/handle/10665/44171> (2009, accessed 11 January 2021).
21. MedlinePlus. Episiotomy – aftercare, <https://medlineplus.gov/ency/patientinstructions/000483.htm> (2019, accessed 11 January 2021).
22. HealthLine. Apgar score: What you should know, <https://www.healthline.com/health/apgar-score#apgar-rubric>. (2005, accessed 5 February 2021).
23. Libraries FSU. Goodness-of-tests for logistic regression, <https://diginole.lib.fsu.edu/islandora/object/fsu:253874/datastream/PDF/view> (2010, accessed 5 February 2021).
24. Yirga WS, Nega K, Mengistu G, et al. Female genital mutilation: prevalence, perceptions, and effect on women's health in Kersa district of Ethiopia. *Int J Women's Health* 2012; 4: 45–54.
25. Anjulo BB and Lambebo AF. Prevalence and associated factors of female genital mutilation among reproductive age women of Wolayita Zone, Southern Ethiopia: a cross-sectional study. *Int J Sex Reprod Health Care* 2021; 4(1): 91–98.
26. Gebremariam K, Assefa D and Weldegebreal F. Prevalence and associated factors of female genital cutting among young adult females in Jigjiga district, eastern Ethiopia: a cross-sectional mixed study. *Int J Womens Health* 2016; 8: 357–365.
27. Klein E, Helzner E and Shayowitz M. *Female genital mutilation: health consequences and complications—a short literature review*. Geneva: WHO, 2018.
28. UNFPA. Female genital mutilation (FGM) frequently asked questions. <https://www.unfpa.org/resources/female-genital-mutilation-fgm-frequently-asked-questions> (2022, accessed 11 January 2021).