ARSI UNIVERSITY

COLLEGE OF HEALTH SCIENCES DEPARTMENT OF MIDWIFERY

UTILIZATION OF CHLORHEXIDINE GEL FOR UMBILICAL CORD CARE AND ASSOCIATED FACTORS AMONG MOTHERS OF INFANTS AGED LESS THAN SIX MONTHS ATTENDING PUBLIC HEALTH FACILITIES IN ASELLA TOWN, OROMIA REGION STATE, ETHIOPIA

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A THESIS REPORT SUBMITTED TO THE DEPARTMENT OF MIDWIFERY, COLLEGE OF HEALTH SCIENCES, ARSI UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCEIENCE IN MATERNITY AND REPRODUCTIVE HEALTH.

FEBRUARY, 2025

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Acronyms and Abbreviations

ANC	Antenatal Care
AOR	Adjusted Odd Ratio
CHX	Chlorhexidine
CI	Confidence Interval
COR	Crude Odd Ratio
EDHS	Ethiopia Demographic Health Survey
OPD	Out Patient Department
PNC	Postnatal Care
SPSS	Statistical Package of Social Science
VIF	Variance Inflation Factors
WHO	World Health Organization

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Abstract

Introduction: Evidence showed that umbilical cord hygiene prevents sepsis, which is one cause of neonatal mortality. The World Health Organization (WHO) recommends 7.1% chlorhexidine gluconate (CHX) application to the umbilicus for the consecutive seven days in high mortality contexts. However, there is paucity of studies on utilization of chlorhexidine gel for umbilical cord care in Ethiopia.

Objective: To assess utilization of chlorhexidine gel for umbilical cord care and associated factors among mothers having infants less than six months of age attending public health facilities of Asella town, Oromia regional state, Ethiopia,2024.

Methods: A facility-based cross-sectional study was conducted from October 12, 2024 to November 12,2024 among 415 mothers with infants aged less than six months in public health facilities of Asella town. A systematic random sampling technique was employed to select study participants. Data was collected using the structure and a pre-tested questionnaire. Data was entered into Epi Data version 4.6 and exported to SPSS version 26 for analysis. A binary logistic regression model was used to identify associated factors. The adjusted odds ratio with a 95% confidence interval and a p-value less than 0.05 was used to determine the statistically significant.

Results: The utilization of chlorhexidine gel in this study was 30.2% (95% CI: 25.5- 34.9). Being multiparous (AOR: 2.60; 95% CI: 1.06,6.38), received counsel on cord care (AOR: 2.09; 95% CI: 1.08,4.06), having favorable attitude (AOR: 2.50; 95% CI: 1.35,4.62) and good knowledge (AOR: 2.08; 95% CI: 1.16, 3.70) were found significantly associated with an adequate utilization of chlorhexidine gel.

Conclusion and recommendation: Utilization of chlorhexidine was lower than the national finding. Having good knowledge, favorable attitude, being multiparous and receiving counsel on cord care were associated with adequate utilization of chlorhexidine. Therefore, it is recommended that healthcare providers should strengthen counseling mothers during postnatal care on the benefits and importance of chlorhexidine use.

Keywords: Utilization, chlorhexidine gel, umbilical cord care, Asella, Ethiopia.

1. Introduction

1.1 . Background

Chlorhexidine gel is a powerful antibiotic that prevent microorganisms in umbilical cord (1). Healthcare providers can lower the risk of infection and stop bacteria from growing by using the chlorhexidine gel. Chlorhexidine gel helps to improve healing by maintaining a sterile and clean environment for the umbilical cord stump to recover, in addition to preventing infection (2,3).

Evidences has shown that applying 7.1% chlorhexidine gel to the umbilical cord stump is a widely accepted practice in many hospitals and healthcare settings to prevent infection and promote healing after birth (4). Chlorhexidine has been approved by the WHO as a suitable antibiotic for newborn care. The WHO recommendation for umbilical cord care states that for newborns born at home in areas with high neonatal mortality, daily administration of chlorhexidine (7.1% chlorhexidine gluconate aqueous solution or gel) to the umbilical cord stump during the first week of life is advised (5).

According to the WHO recommendation the use of chlorhexidine gel for umbilical cord care is very important as part of a comprehensive strategy to reduce neonatal mortality and morbidity, particularly in settings with limited access to clean water and healthcare resources. In this manner, it is suggested that applying the gel to the umbilical cord stump after birth, and then repeating the application every 24 hours until the cord stump falls off or for fully seven days (6).

A study conducted in Ethiopia reported that 46.1% of the newborns received chlorhexidine to the umbilical cord after birth. The proportion of newborns who received chlorhexidine to the umbilical cord stump within 24 hours of birth was 34.4%, though this the extent of chlorhexidine cord care varied widely across regions with the highest rate (60%) in Tigray and the lowest (24.4%) in Oromia. Among the newborns who received chlorhexidine cord care, 48.3% received it for the recommended seven days or more (7). Even though some studies conducted at health institutions in Ethiopia on the issues, there is limited evidence whether mothers fully utilized as per recommended. Therefore, this study was aimed to assess the utilization of chlorhexidine gel and affecting factors among mothers with infants less than 6 months.

1.2 . Statement of the problem

Neonatal mortality remains a significant public health challenge, particularly in low-income countries like Ethiopia. Infections, including omphalitis (umbilical cord infections), account for a substantial proportion of neonatal deaths. Proper umbilical cord care is critical to reducing the risk of infections and improving neonatal survival, where healthcare access and hygiene practices are often limited, the burden of neonatal infections is particularly high (8).

Neonatal sepsis is a leading cause of newborn mortality worldwide, contributing to approximately 15% of the 2.4 million neonatal deaths annually. In Sub-Saharan Africa, where healthcare systems are often under-resourced, neonatal sepsis accounts for nearly 25% of neonatal deaths, with a mortality rate significantly higher than the global average due to limited access to antibiotics, skilled care, and infection prevention measures (9).

Not using chlorhexidine for newborns can have a number of negative effects, such as raising the risk of serious infections like sepsis and omphalitis (inflammation of the umbilical cord), higher mortality rates, particularly for preterm or low-birth-weight babies, infections that can lengthen hospital stays, raise expenses, and expose babies to additional infections (10).

A previous study identified different factors that affect chlorhexidine cord care practice. Such as mothers' understanding of the importance of cord care and the benefits of chlorhexidine, cultural beliefs, traditional practices, and personal preferences related to cord care, higher education status, adequate supply of chlorhexidine in healthcare facilities, availability of healthcare services and accessibility to maternal and child health care, availability of accurate information about cord care and the benefits of chlorhexidine (7,11–14).

Federal Ministry of Health of Ethiopia has adopted and developed strategies to promote utilization of chlorhexidine for umbilical cord care, including ensuring uninterrupted supply of chlorhexidine to health facilities and integrating chlorhexidine counseling during postnatal care (PNC), even though all these efforts and activities were implemented still there is a prevalent of neonatal sepsis and mortality (15,16). Furthermore, there is limited evidence whether mothers fully utilized as per recommended. Therefore, the present study was aimed to assess the utilization of chlorhexidine gel for umbilical cord care and associated factors among mothers having infants less than six months of age attending public health facilities of Asella town, Oromia regional state, Ethiopia, 2025.

1.3. Significance of the study

The finding from this study may help mothers to identify barriers to its utilization, including awareness of chlorhexidine, access to chlorhexidine, knowledge of correct technique, cultural and social factors.

The findings will help healthcare providers to identify barriers to its utilization among mothers and to develop effective interventions, to educate them about the importance of chlorhexidine in preventing infections and promoting wound healing in order to improve mother utilization of chlorhexidine for umbilical cord care of her neonate. It will assist in directing the health professionals' intervention to educate mothers and other caregivers about current methods for utilization chlorhexidine for umbilical cord care during ANC and PNC.

Additionally, the study's findings support the work of health care planners and policy makers by offering pertinent data on the barriers to optimal utilization of chlorhexidine cord care practices for newborn care, provide as a baseline for developing effective interventions aimed at enhancing the usage of chlorhexidine cord care practices and provide evidence-based information to inform policy-making, including the development of guidelines and policies for utilization chlorhexidine gel cord care practice.

Lastly, this study may provide pathways and information for other future researchers on similar studies, contributing to the existing body of knowledge on the topic.

2. Literature Review

2.1. Magnitude of chlorhexidine cord care

A cross-sectional study conducted in Bangladesh and Nepal indicated that the utilization of chlorhexidine for cord care was 15.0% in Bangladesh and 50.7% in Nepal (17). A household survey conducted in four districts of Bangladesh found chlorhexidine usage to be 33%(18).

A cross sectional study conducted in Plateau State located in the North Central region of Nigeria revealed that 35.1% of the respondents had poor knowledge of cord care while 43.3% and 21.6% had fair and good knowledge respectively. Only 6.9% mothers used chlorhexidine gel for cord care (19). A study conducted in Nigeria indicated that 16.3% mothers used chlorhexidine (20). A study conducted among mothers attending health facilities in Ibadan, Nigeria showed that 48.1% of the respondents had a good level of knowledge of appropriate umbilical cord care and 61.4% respondents practiced good cord care (21).

A study conducted in Nigeria showed that 8.1% of mothers use of chlorhexidine for umbilical cord care (22). A cross-sectional study conducted among postpartum women in Southeast Nigeria indicated that 52.1% women had poor knowledge of chlorhexidine gel use in umbilical cord care, 46.6% had ever used chlorhexidine gel for umbilical cord care, while 25.7% used chlorhexidine gel for their last child (12). A study conducted in conducted in two communities of Plateau State, North central Nigeria. Showed that 77.8% women had good cord care practice (23).

A hospital-based cross-sectional study conducted in the Tanzania indicated that 62.2% women had adequate knowledge of umbilical cord care and 21% of them had good umbilical cord care practice(11). A cross-sectional study conducted among postnatal mothers attended public health facilities of Morogoro municipal in Tanzania showed that 52.6% mothers had adequate knowledge on cord care practice (24).

A cross-sectional study conducted among 582 women of reproductive age with a young child less than one year in three state of Kenya revealed that only 1.3% women having ever used chlorhexidine gel (25). Similarly a study conducted referral hospital of Kenya showed that 64% of the mothers used chlorhexidine on the cord(26). A study conducted in public health

facilities in Kiambu County, Kenya revealed that 41% use of chlorhexidine and 22% of the mothers were provided chlorhexidine post-delivery (27).

A secondary data analyses extracted from the 2016 Ethiopian Demographic and Health Survey (EDHS) of Ethiopia showed that about 13.7% of mothers practice harmful traditional umbilical cord care(28). A study conducted in four regions of Ethiopia indicated that 48.3% newborns received chlorhexidine cord care for recommended days (7). An institution-based cross-sectional study among mothers visiting Mizan-Tepi University Teaching Hospital Southwest Ethiopia revealed that 59.2% of the mothers had good cord care practices (29).

2.2. Factors associated with utilization of chlorhexidine cord care

2.2.1. Socio-demographic factors

A study conducted in two communities of Plateau State, North central Nigeria showed that residence in urban community was factor associated with cord care practices (23). A cross-sectional study conducted among postpartum women in Southeast Nigeria indicated that women with higher educational was associated with use of chlorhexidine gel for caring the neonate (12).

A cross-sectional study conducted among postnatal mothers attended public health facilities of Morogoro municipal in Tanzania showed that women who attended primary school and secondary school was significant relationship with the knowledge of cord care practice (24). A hospital-based cross-sectional study conducted in the Tabora region of Tanzania indicated that living in urban areas and having a higher education level were factors associated with knowledge of umbilical cord care while having a higher education level and being employed, were factors associated with practice of umbilical cord care (11). A study conducted in public health facilities in Kiambu County, Kenya revealed that being employed increased the likelihood of using chlorhexidine(27).

A secondary data analyses extracted from the 2016 Ethiopian Demographic and Health Survey of Ethiopia showed that maternal age 25–34 years and maternal primary education were factors associated with potentially harmful traditional umbilical cord care practices(28). An institution-based cross-sectional study among mothers visiting Mizan-Tepi University Teaching Hospital Southwest Ethiopia revealed that mothers who attended college and the

above educational attainment was factor significantly associated with good cord care practices (29).

2.2.2. Obstetrics and Maternal related factors

A study conducted in Southeast Nigeria showed that mothers who had good knowledge was significantly associated with chlorhexidine usage (12). A hospital-based cross-sectional study conducted in the Tabora region of Tanzania indicated that being a multipara was factor associated with practice of umbilical cord care (11). A secondary data analyses extracted from the 2016 Ethiopian Demographic and Health Survey of Ethiopia showed that parity two was factors associated with potentially harmful traditional umbilical cord care practices(28). A study conducted in four regions of Ethiopia showed that neonates born to mothers having knowledge of the benefit of chlorhexidine cord care had significantly associated with receiving chlorhexidine cord care (7).

2.2.3. Health service utilization related factors

A study conducted in North central Nigeria showed that heath facility delivery was factor associated with cord care practices (23). A study conducted in the Tanzania indicated that having delivered in a health facility was factor associated with knowledge of umbilical cord care (11). A study conducted referral hospital of Kenya showed that mothers who attended four antenatal clinic visits were more likely to practice recommended cord care (26). A study conducted in public health facilities in Kiambu County, Kenya revealed that delivery in hospital increased the likelihood of using chlorhexidine(27).

A secondary data analyses extracted from the 2016 Ethiopian Demographic and Health Survey of Ethiopia showed that home delivery was factor associated with potentially harmful traditional umbilical cord care practices(28). A study conducted in four regions of Ethiopia among women 0–11 months postpartum indicated that mother with skilled birth attendants had significantly associated with receiving chlorhexidine cord care (7). An institution-based cross-sectional study among mothers visiting Mizan-Tepi University Teaching Hospital Southwest Ethiopia revealed that mothers who had ANC follow-up was factor significantly associated with good cord care practices (29).

2.3. Conceptual framework

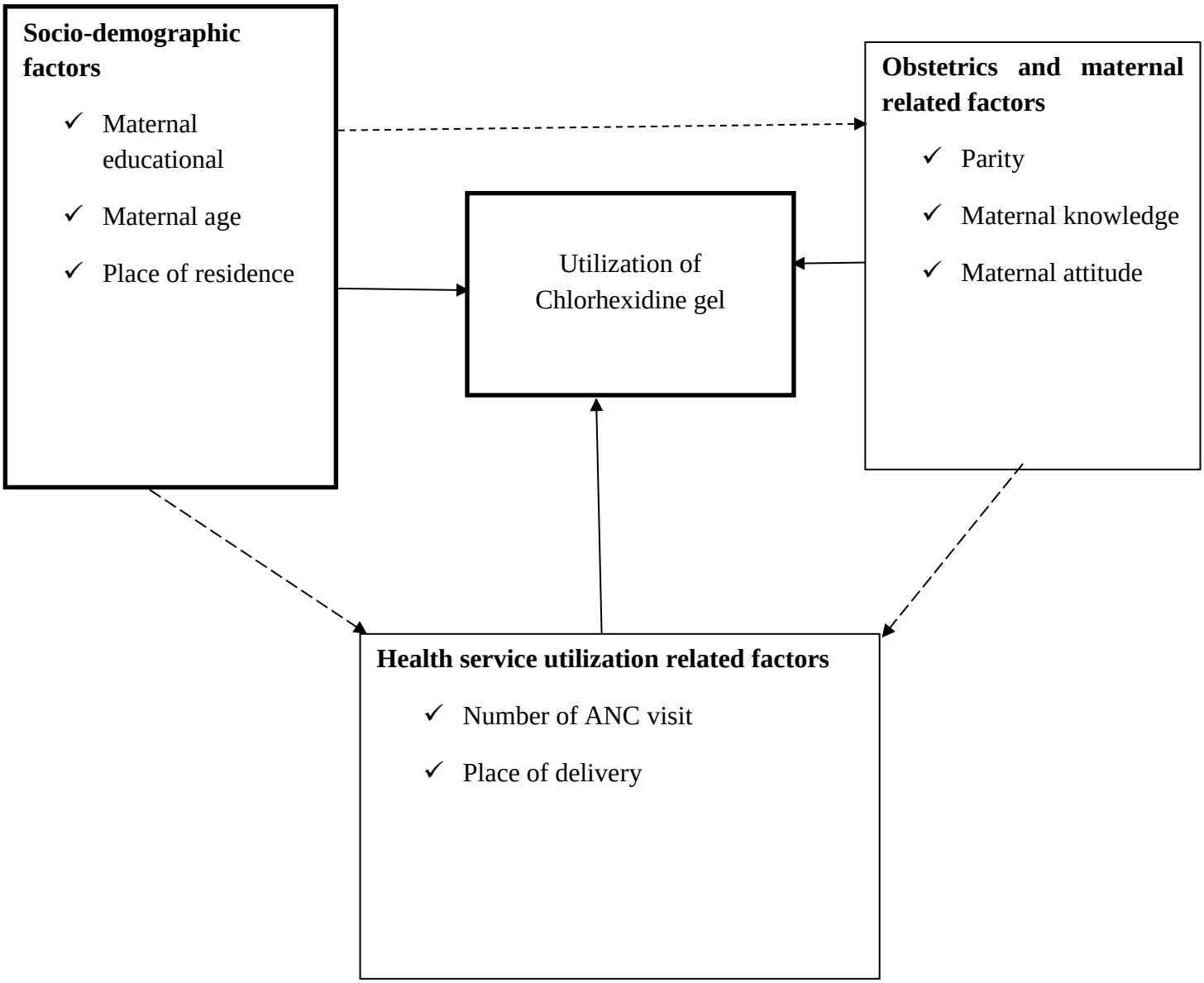

Figure 1: Conceptual frame work of factors associated with utilization of chlorhexidine gel adapted from different literatures(12,30,31).

3. Objectives

3.1. General objective

To assess the utilization of chlorhexidine gel for umbilical cord care and associated factors among mothers having infants less than six months of age attending public health facilities of Asella town, Oromia Regional State, Ethiopia,2024.

3.2. Specific objective

- To assess the magnitude chlorhexidine gel utilization for umbilical cord care among mothers having infants less than six months of age attending public health facilities of Asella town, Oromia Regional State, Ethiopia,2024.
- To identify factors associated with chlorhexidine gel utilization for umbilical cord care among mothers having infants less than six months of age attending public health facilities of Asella town, Oromia Regional State, Ethiopia,2024.

4. Methods and Materials

4.1. Study setting and period

The study was conducted in public health facilities of Asella town which is found 175 km away from Addis Ababa to the Southeast Ethiopia. In the town, there are one government referral hospital, two private hospitals, two health centers, and 24 medium clinics. According to the Asella town health office report of 2023/24, the town has an estimated population size of 196,410. Out of the total population, about 2808 of the total population are expected children less than six month of age (32). The study was conducted from October 12, 2024 to November 12,2024.

4.2. Study design

A facility based cross-sectional study design was employed.

4.3. Source population

All mothers who had infant less than six months of age attending public health facilities in Asella town

4.4. Study population

All randomly selected mothers who had infant less than six months of age attending public health facilities during data collection at Asella town

Inclusion criteria: - Mothers who lived in Asella town for 6 months and mothers who had infant less than six months who attended public health facilities during data collection were included in the study

Exclusion criteria: - Mothers whose babies required emergency treatment were excluded from the study. Additionally, mothers who were infant age less than one week were excluded from the study.

4.5. Sample size determination

Sample size was calculated using single population proportion formula or by using Epi info version 7.2.5. Accordingly, the sample size was calculated by consideration of the following assumptions.

P: Proportion of utilization of chlorhexidine for recommended seven days and more in Ethiopia was 48.3% in 2022 (7) .

d =the margin error was 5%.

Z α/2= critical value at 95% confidence level was 1.96

n: sample size

$$n = \frac{\left(Z\frac{\alpha}{2}\right)^2 P(1-P)}{d^2}$$

$$n = \frac{(1.96)^2 0.483(1-0.483)}{0.05^2}$$

$$n = 384$$

For the second objective, the sample size was calculated by using double population proportion formula or EPI Info version 7.2.5 software by considering the following assumptions. Power=80%, 95% confidence level and ratio=1

Table 1: Sample size calculation for factors associated with chlorhexidine cord care in Ethiopia by statcalc epi info.

S/N	Variables	Proportion of chlorhexidine cord care		Sample size	Reference
		Non-exposed (P1)	Exposed (P2)		
1	Skilled birth attendant	73.28%	98%	78	(7)
2	Knowledge on the benefit of chlorhexidine cord care	23.76%	92.87%	20	

By comparing the first and second objectives, the maximum sample size was taken from the first objective by considering 10% non- response rate, the final sample size was 423.

4.6. Sampling procedure

All public health facilities in Asella town were included in the study to get the representative sample. The number of study participants from these health facilities were determined from

the previous immunization and under-5 OPD services client flow report. The monthly client flow was determined by taking the average number of immunization and under-5 OPD attendants from the last three-month report for each health facility. The average monthly client flow in three health facilities was 1155. Then, the sample size was proportionally distributed to the health facilities based on their average monthly client flow. Finally, the study participants were selected by systematic random sampling based on their monthly flow of visits. The sampling interval (Kth value) was calculated by dividing the total number of units in the population by the desired sample size, and the k value was found to be 2. Then, a number between one and the three value was taken as the random starting point. When mothers with infants aged less than 6 months who fulfilled the inclusion criteria come to immunization and under-5 OPD services, they were selected by using systematic random sampling and interviewed until an estimated sample size was achieved from each health facility (figure 2).

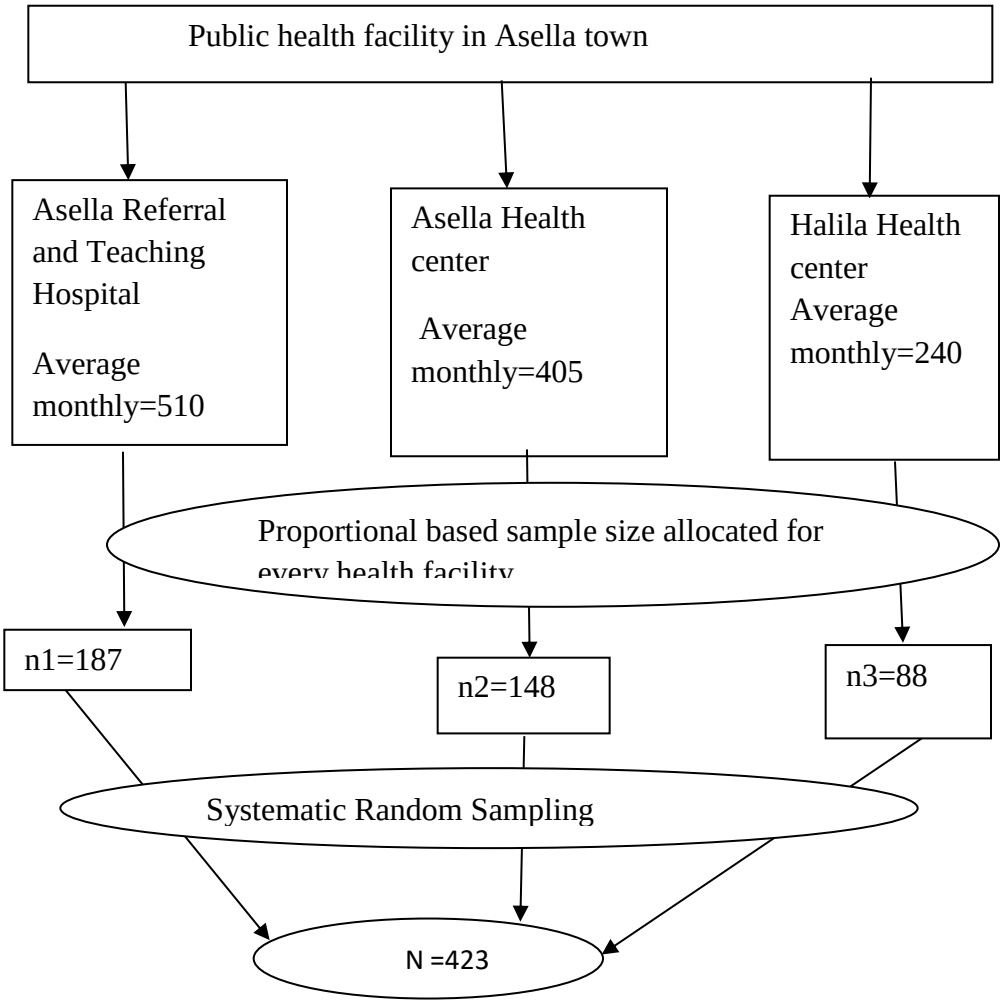

Figure 2: Schematic presentation of the Sampling procedure of utilization of chlorhexidine gel for umbilical cord care among mothers having infants less than six months of age attending public health facilities of Asella town, Southeast, Ethiopia,2024

4.7. Variables of the study

Dependent variable

Utilization of chlorhexidine gel (adequate/in adequate)

Independent variables

Socio-demographic factor: Age of the mother, marital status, maternal occupation, maternal educational status, husband education, husband occupation, ethnicity, religion, child sex, child age and family size.

Obstetrics and maternal-related factors: Parity, previous history of neonatal death, number of live births, knowledge and attitude of mothers on chlorhexidine.

Health service utilization related factor: number of ANC visits, place of birth, mode of delivery, PNC, and received counsel on cord care

4.8. Operational definitions

Utilization of chlorhexidine gel: If mothers apply chlorhexidine gel to umbilical cord at least for 7 days it was considered as adequate utilization otherwise, it was considered as inadequate utilization (7).

Knowledge of mothers on chlorhexidine cord care was measured by eight question items that measure knowledge on chlorhexidine cord care practice. Those mothers whose mean score greater than or equal to the obtain mean value was categorized as good knowledge while those below the obtain mean value was categorized as poor' knowledge(16,33).

Attitude of mother's toward chlorhexidine cord care: Attitude were assessed using 8 questions using a Likert scale (16,33).. The scoring system was taken according to the responses of the participants: strongly agree score 5, agree score 4, neither agree nor disagree score 3, disagree scores 2, and strongly disagree 1. To calculate mean the Likert scale dichotomous to disagree and agree by merging strongly agree and agree recoding as "1" and all other values (strongly disagree, disagree and neutral) by recoding "0". Then computed all recoded attitude response by adding each response together to see score out of 8. The maximum score expected was 8 and the minimum was 0. Since the attitude score not normally distributed median was obtained to categorized attitude as favorable when it was equal or greater than median whereas respondents scoring below the median considered as unfavorable attitude.

4.9. Data collection tools and procedures

Data was collected by face-to-face interviews using pre- tested and structured questionnaires which were prepared after reviewing different literature on related topic(12,30,31). The questionnaire consists of socio-demographic characteristics, maternal health service, obstetric related factors, and knowledge on chlorhexidine gel practice for cord care items. Data was

collected by six clinical nurse professionals with the supervision of two public health officers.

4.10. Data quality assurance

The questionnaire was first developed in English and translated to Afan Oromo and Amharic language by language expert. Before conducting the actual study, the questionnaire was pre-tested on 5% of sample size in Sagure health center which is located 25 kilometers away from the study area and modification of the data collection tool was made on sequence, grammar and how to conduct interview. The internal consistency (reliability) of the tool was measured by using Cronbach alpha (overall Cronbach alpha=0.904). Data collectors and supervisors was trained for one day by principal investigator about the objective of the study and data collection methods. During the actual data collection, close supervision was made by the supervisors and principal investigator on a daily basis to check consistency and completeness of checklist.

4.11. Data processing and analysis

Data were entered into Epi data 4.6 and exported into Statistical Package for Social Science (SPSS) version 26 for data processing and analysis. Descriptive statistical analysis was used to compute the frequency and percentage for independent and dependent variables. A binary logistic regression model was used to identify the association between the dependent variable and the independent variable. Bivariable analysis was done to select candidate variables for multivariable analysis at p-values < 0.25 to control possible confounding factors. The multicollinearity test was carried out to see the correlation between independent variables, and the maximum variance inflation factor was 1.263. Statistical significance was declared at P-value less than 0.05 and the strength of statistical association was measured by adjusted odds ratios along with 95% confidence intervals. The Hosmer-Lemeshow model was used to check model fitness, and its p-value was 0.465.

4.12. Ethical considerations

The actual data collection was started after Ethical approval was obtained from the Ethical Review Committee. I also took supportive letter from Asella district health office. Informed

verbal consent was obtained from all the participants of the study and confidentiality was assured and ensured. The participants were told about the aim of the study, and they were also informed that the information they provide was kept confidential as the data was used only for the purpose of generating new information. They were also told they have the right to refuse the interview even withdraw from the study at any time they want.

5. RESULTS

5. 1. Socio-demographic characteristics of the study participants

A total of 415 mothers were participate in the study making the response rate 98.1%. The mean age (±SD) of the respondents was 29.7 (±7.18) years. One hundred forty-seven (35.4%) of the respondents were in the age group 25–34 years. Four hundred-four (97.3%) of participants were married. About, 220 (53%) of study participants were Oromo by ethnicity. Among the total participants, 183 (43.9 %) mothers attended secondary school and above and about, 201 (48.4%) of study participants were housewives (Table 2).

Table 2 Socio-demographic characteristic of study participants in public health facilities of Asella town Southeast Ethiopia, 2024 (N = 415)

Variables	Frequency	Percentage
Maternal age		
18-24	123	29.6
25-34	147	35.5
35-44	145	34.9
Marital status		
Married	404	97.3
Others*	11	2.7
Ethnicity		
Oromo	220	53
Amhara	103	24.8
Silte	51	12.3
Gurage	41	9.9
Religion		
Orthodox	212	51.1
Muslim	147	35.4
Protestant	47	11.3
Others**	9	2.2
Maternal education		
No formal education	71	17.1
Primary education	162	39
Secondary and above	182	43.9
Maternal occupation		
Civil servants	101	24.3
Merchant	76	18.3
Housewife	201	48.4
Daily laborer	37	9
Child sex		
Male	211	50.8
Female	204	49.2

*: Single, divorced and widowed; **: Catholic and Wakefata

5.2. Obstetrics and maternal health service utilization related factors

Among the total of the respondents, 350 (84.3%) were multipara. About, 375 (90.4%) of study participants has no previous history of neonatal death. Three hundred seventy-one (89.4%) of study participants were received antenatal care (ANC) services during pregnancy, out of these 301 (72.5%) were received four and above ANC visits. Regarding place of delivery, 208(50.1%), 184(44.3%) and 23 (5.5%) mothers gave birth at hospital, health center and home respectively. About, 374 (90.1%) of mothers gave birth via spontaneous vaginal delivery. Three hundred ninety-seven (95.7%) of mothers received PNC and 292 (70.4%) of mothers received counsel on cord care (table 3).

Table 3 Obstetrics and maternal health service utilization related characteristic of study participants in public health facilities of Asella town Southeast Ethiopia, 2024 (N = 415)

Variables	Frequency	%
Parity		
Multiparity	350	84.3
Primiparity	65	15.7
History of neonatal death		
Yes	40	9.6
No	375	90.4
Antenatal care follow-up		
Yes	371	89.4
No	44	10.6
Antenatal care contact		
>=4	301	81.1
<4	70	18.9
Place of delivery		
Health center	184	44.3
Hospital	208	50.1
Home	23	5.5
Birth attendant		
Health professionals	392	94.5
Traditional birth attendants	23	5.5
Mode of delivery		
Spontaneous vaginal delivery	374	90.1
Cesarean section delivery	41	9.9
Postnatal care		
Yes	397	95.7
No	18	4.3
Counselled on cord care		
Yes	292	70.4
No	123	29.6

5.3. Maternal knowledge on chlorhexidine

Around, 248(59.8%) of mothers had good knowledge on chlorhexidine gel practice for umbilical cord care. Among this, 344(82.9%) had information on Chlorhexidine, 245(59%) apply chlorhexidine, 242(58.3%) know the purpose 235(56.6%) know how often to apply (figure 3).

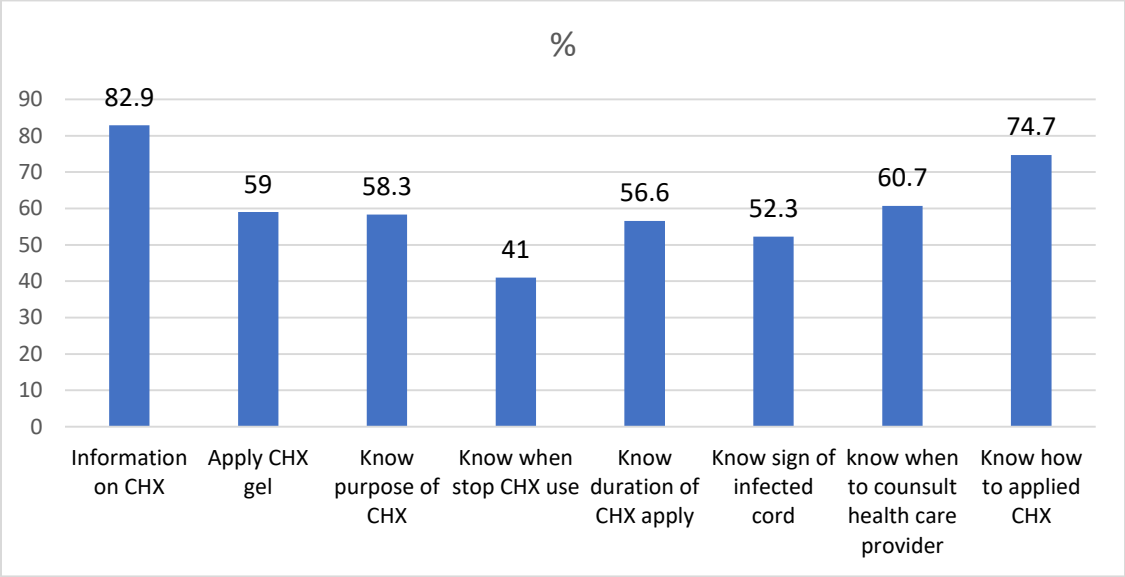

Figure 3 Maternal knowledge assessing variables of study participants in public health facilities of Asella town Southeast Ethiopia, 2024 (N = 415)

5.4. Attitude toward chlorhexidine gel

Two hundred twenty-nine (55.2%) of mothers had favorable attitude towards chlorhexidine gel practice, 278(67%) of study participants agree on chlorhexidine important, 260(62.7%) were agreed on using chlorhexidine better than traditional methods, 260(62.7%) were agreed using chlorhexidine gel preventing umbilical cord infections and 184(44.3%) were agreed applying CHX for umbilical cord care have no side effect (table 4.)

Table 4 Maternal attitude toward chlorhexidine practice of study participants in public health facilities of Asella town Southeast Ethiopia, 2024 (N = 415)

Attitude variables	Agree (%)	Disagree (%)
CHX important for umbilical cord care	278(67)	137(33)
using chlorhexidine gel is better than traditional methods	260(62.7)	155(37.3)
Chlorhexidine gel is safe for newborns	273(65.8)	142(34.2)
using chlorhexidine gel preventing umbilical cord infections	260(62.7)	155(37.3)
Hand washing required before applying chlorhexidine gel	348(83.9)	67(16.1)
Applying CHX gel no need to rinse the umbilical cord stump	221(53.3)	194(46.7)
Recommend CHX gel to other mothers	201(48.4)	214(51.6)
Applying CHX for umbilical cord care have no side effect	184(44.3)	231(55.7)

5.5. Utilization of chlorhexidine among study participants

The study identified that 111 (30.2%) (95% CI: 25.5-34.9) of mothers had adequate utilization of chlorhexidine (figure 3).

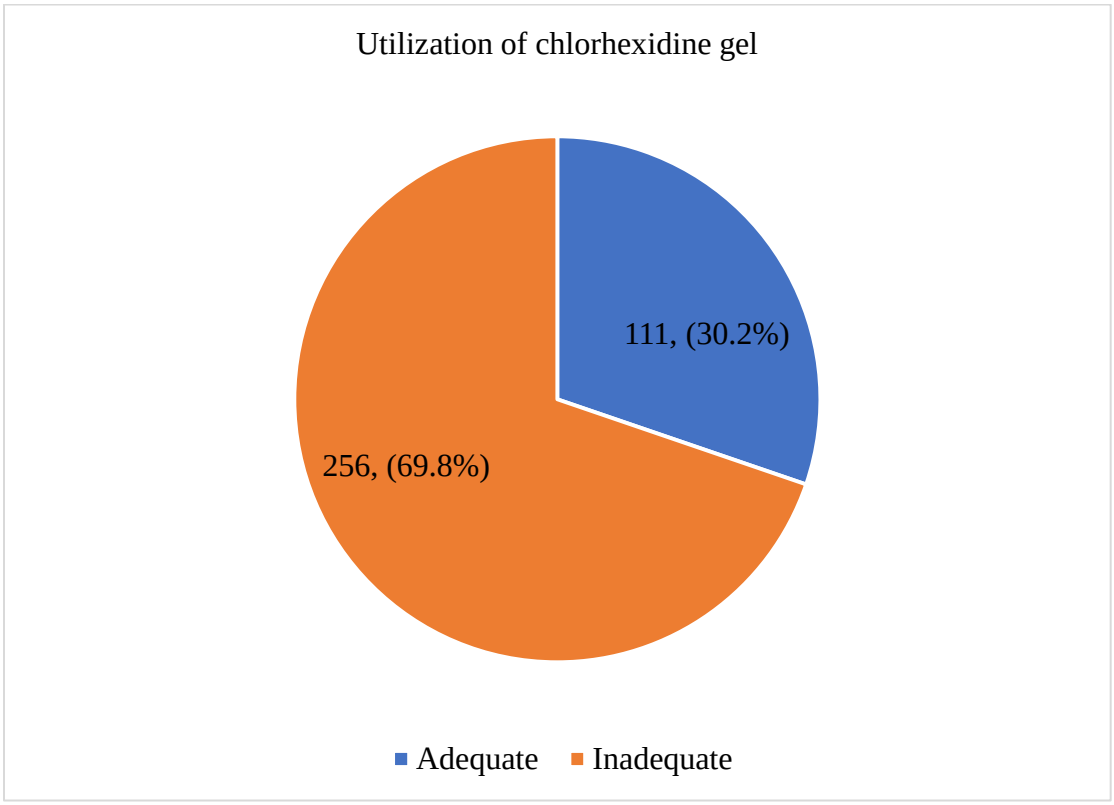

Figure 4 Utilization of chlorhexidine for umbilical cord care in public health facilities of Asella town Southeast Ethiopia, 2024 (N = 415)

5.6. Factors Associated with Utilization of Chlorhexidine

In this study, both bivariable and multivariable logistic regression analysis were computed. In the bi-variable analysis, maternal age, educational status of the mother, parity, having history of neonatal death, place of delivery, received counsel on cord care, maternal knowledge, and attitude were identified as candidate variables for multivariable logistic regression analysis at the p-value < 0.25. In the multivariable analysis, multiparity, received counsel on cord care, having favorable attitude and good knowledge were significantly associated with utilization of chlorhexidine at a p-value of 0.05 with a 95% CI.

Mother with multiparous had 2.60 more likely to utilized chlorhexidine compared to primiparous mother (AOR: 2.60; 95% CI: 1.06,6.38). Mother who received counsel on cord care had 2.09 times more likely to utilized chlorhexidine compared those mothers who didn't receive counseling (AOR: 2.09; 95% CI: 1.08,4.06). Mothers who had favorable attitude toward chlorhexidine practice were 2.50 times more likely to utilized chlorhexidine when compared to mothers who had unfavorable attitude (AOR: 2.50; 95% CI: 1.35,4.62). Mothers who had good knowledge on chlorhexidine were 2.08 times more likely to utilized chlorhexidine when compared to mothers who had poor knowledge (AOR: 2.08; 95% CI: 1.16, 3.70) (table 5).

Table 5 Bivariate and multivariable analysis of factors associated with utilization of chlorhexidine in Asella town public health facilities, Southeast, Ethiopia, 2024.

	Chlorhexidine utilization			
Variables	Adequate	Inadequate	COR (95%CI)	AOR (95%CI)
Maternal age				
18-24	28	88	1	1
25-34	43	97	1.39(0.79,2.433)	1.85(0.99,3.51)
35-44	40	71	1.77(0.99,3.14)	1.83(0.99,3.47)
Maternal education				
No formal education	14	51	1	1
Primary education	40	105	1.38(0.69,2.77)	1.11(0.51,2.42)
Secondary and above	57	100	2.07(1.05,4.07)	1.52(0.71,3.26)
Parity				
Primiparity	7	49	1	1
Multiparity	104	207	3.51(1.53,8.03)	2.60(1.06,6.38) ∗
History of neonatal death				
Yes	15	19	1.94(0.95,3.99)	1.41(0.63,3.18)
No	96	237	1	1
Place of delivery				
Health center	32	131	0.69(0.25,1.89)	0.90(0.28,2.87)
Hospital	73	108	1.91(0.72,5.08)	2.29(0.76,6.89)
Home	6	17	1	1
Counseled on cord care				
Yes	93	185	1.98(1.11,3.52)	2.09(1.08,4.06) ∗
No	18	71	1	1
Attitude				
Favorable	92	134	4.40(2.54,7.65)	2.50(1.35,4.62) ∗
Unfavorable	19	122	1	1
Knowledge				
Good	88	138	3.27(1.94,5.50)	2.08(1.16,3.70) ∗
Poor	23	118	1	1

∗Statistically significant at $p<0.05$; 1 = used as reference category; COR: Crude Odds Ratio; AOR: Adjusted Odds Ratio; CI: Confidence Interval

6. Discussion

This finding revealed that the utilization of chlorhexidine was 30.2% (95% CI: 25.5-34.9). This finding was similar to a study conducted in Bangladesh 33%(34). On the other hand, this finding is lower than the study conducted in Nepal 50.7% (17) and Ethiopia 48.3 % (7). This variation might be due to study area and sample size. Furthermore, a possible reason in the case of the study conducted in Ethiopia was conducted at the national level. The level of education and awareness about chlorhexidine among mothers may also vary between countries, which can affect its use. The variance in results may also be caused by differences in the study population, sample size, design, and data collection technique.

However, the current utilization of chlorhexidine is higher than study conducted in Bangladesh 15% (17) and Nigeria 16.3%(20). A difference in the study area and sample size could be the cause of the potential variation. Furthermore, cultural and social factors, such as customs that differ from nation to nation, may have an impact on the use of chlorhexidine. May be due the availability and accessibility of chlorhexidine may differ between nations, which can affect its use. Also, due to research undertaken in different time periods may have different outcomes due to changes in healthcare policies, practices, or environmental factors.

Mother with multiparous more likely to utilized chlorhexidine compared to primiparous mother. This result is supported by a study conducted in the Tanzania (35). This could be because multiparous mothers received more health education and counseling during their previous pregnancies, it's possible that they utilized and understood chlorhexidine more. Additionally, multiparous mothers may find it easier to receive medical care, have a better experience with chlorhexidine use, and feel more at ease using it. Because of their experience and understanding of the advantages of chlorhexidine, they might be more willing to adhere to the advice of health care providers and obtain instruction regarding its use.

Mother who received counsel on cord care more likely to utilized chlorhexidine compared those mothers who didn’t receive counseling. This could be because mothers' knowledge and understanding of the significance of using chlorhexidine for umbilical cord care may have increased as a result of cord care counseling, increasing the likelihood that they will use it. Additionally, mothers may have been more motivated to use chlorhexidine and likely to follow their healthcare providers' advice, including using chlorhexidine, if they had received

counseling that helped them understand the advantages of the medication, such as the decreased risk of umbilical cord infections.

Mothers who had favorable attitude toward chlorhexidine practice were more likely to utilized chlorhexidine when compared to mothers who had unfavorable attitude. This finding is supported study conducted in Nigeria (26) and in Ethiopia (13). Mothers who have a positive attitude regarding the use of chlorhexidine may view it as a safe and effective way to avoid umbilical cord infections, which could increase their willingness to use it. Additionally, women who have a positive attitude toward chlorhexidine are more likely to think that this antibacterial is useful and essential for umbilical cord care. They might see the advantages of chlorhexidine, like its capacity to lower the risk of infections in newborns and improve their health. They may be inspired to aggressively use chlorhexidine in their newborn care practices by this favorable belief and understood advantage.

Mothers who had good knowledge on chlorhexidine were more likely to utilized chlorhexidine when compared to mothers who had poor knowledge. This finding is supported with study conducted in Nigeria (36) and Ethiopia (7). This could be because mothers who are knowledgeable about chlorhexidine may be more likely to use it because they can make better choices regarding their own and their child's care. Mothers who are familiar with chlorhexidine are likely to have a better understanding of its benefits and importance in newborn care. Their greater knowledge of chlorhexidine's potential consequences on the health and welfare of their newborns may make them more likely to take it.

7. Strength and Limitation of the study

The strength of the study was, the study tried to assess additional independent factors of which was not investigated by other similar previous studies. All health facilities of the study area were included in to the study. There were some limitations to this study. This study is at a risk of social desirability bias as mothers may not report what they really practiced. The study might be subjected to recall bias number of ANC visit and number of days applied chlorhexidine. Moreover, since the study is institutional based, it may not be generalizable to entire population

8. Conclusion and Recommendation

Conclusion

Utilization of chlorhexidine was lower than the national finding (48.3%). Having good knowledge, favorable attitude, multiparous and receiving counsel on cord care were associated with adequate utilization of chlorhexidine.

Recommendation

Based on the finding of the study the following recommendations were forwarded:

For Asella town health facilities administrative

- Should strengthen healthcare providers to conduct education and awareness campaigns to inform mothers about the benefits of using chlorhexidine for umbilical cord care.
- Encourage their healthcare providers to strengthen counseling on cord care to mothers, to increase their knowledge and awareness of the importance of chlorhexidine gel for cord care. This counseling should include information on the benefits of using chlorhexidine for umbilical cord care and the proper technique for applying it.

For health care provider

- Health care providers should strength knowledge of mothers on chlorhexidine use and its benefits for umbilical cord care.

- Health care provider should improve maternal attitude on the benefits of using chlorhexidine for newborn care to increase awareness and promote positive attitudes towards chlorhexidine use.
- Healthcare providers should strengthen counseling mothers during postnatal care on the benefits and importance of chlorhexidine use

For researcher

- Further researches should be conducted on utilization of umbilical cord care practices to identify more gaps at community level.

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10. Annexes

Annex 1: English version Information Sheet and Consent Form

Greeting -Good morning / afternoon

Hello my name is----------. I am a data collector for master of maternity and reproductive health in Arsi University College of Health Science. I am conducting a survey with the aim of determining the utilization of chlorhexidine cord care practice and associated factors among mothers having infants less than six months of age attending public health facilities of Asella town, Southeast, Ethiopia. The information I collect will help to your facility at large to plan health services. Now you are randomly selected for the survey. The questions usually take about 25 to 35 minutes. The objective of the study: To assess the knowledge of chlorhexidine cord care practice and associated factors among mothers having infants 0-6 months of age attending public health facilities of Asella town, Southeast, Ethiopia.

The benefit of the study: there is no direct benefit of the participant of the study. However, the results of this study will help in identifying the barrier of knowledge of chlorhexidine cord care practice and contributes on input in considering a convenient programmatic approach to solve the problem. The risk of the study: Participating in this study will not have any risk or harm. Right of participants: you have full right either to participate or decline participation in this stud yes. You may respond to all the questions or you may not answer to the questions you don't want and you may end the interview at any time you want. You can ask any questions which is not clear for you. Confidentiality: any information forwarded will be kept confidential and names will not be written or specified.

Are you willing to participate in this study? 1. No (say thank you)

2. Yes (continue interviewing

Name of the principal investigator: Nigat Fano Cell phone No- 0911995939. E mail: nigatfano7@gmail.com

Annex II: English version questionnaires

Code No: _____

Name of data collector_____

Name of health facility_____ Date_____/____/2017 EC

Part One: Socio Demographic information

S/N	Question	Response	Code
101	Age of respondents (in years)	_____	
102	Marital status	1. Married 2. Single 3. Divorced/Separated 4.Widowed	
103	Ethnicity	1. Oromo 2. Amhara 3. Silte 4. Gurage 5. Tigre 6.Others	
104	Religion	1. Orthodox 2. Muslim 3. Protestant 4.Catholic 5.Wakefata	
105	Educational status of woman	1. No education 2. Primary education 3.Secondary education 4.College education & above	

106	Educational status of husband	1. No education 2. Primary education 3.Secondary education 4. College education & above	
107	Occupational status of women	1.Housewife 2.Farmer 3.Civil servants 4.Private sector/NGO 5. Merchant 6.Dail laborer 7.Other(specify)_____	
108	Occupational status of husband	1.Farmer 2.Civil servants 3.Private sector/NGO 4. Merchant 5.Dail laborer 6.Other(specify)_____	
109	Child age	_____month	

Part II: Obstetrics and Health service related factors

SN	Question	Response	Code
201	How many births did you have?	_____	
202	Do you have history of neonatal death?	1. Yes 2. No	

203	Have you been on ANC follow up when you were pregnant for your current baby?	1. Yes 2. No	
204	How many ANC follow up did you attend?	_____	
205	Place of delivery	1. Hospital 2. Health center 3.Home	
206	Type of birth attendant	1.Health professionals 2.Traditional birth attendants	
207	Mode of delivery	1. Spontaneous vaginal delivery 2. Cesarean section delivery	
208	Did you receive PNC by health professionals within 7days delivery?	1.Yes 2.No	
209	Have you received counsel on cord care during PNC?	1.Yes 2.No	
210	Did health profession apply chlorhexidine to your child during PNC?	1.Yes 2.No	
211	Did health profession provide chlorhexidine to your child?	1.Yes 2.No	
212	For how many days did you apply chlorhexidine gel for your child?	_____days	

III. Knowledge of mothers on chlorhexidine gel

SN	QUESTION	RESPONSE	Code
301	Do you have information on chlorhexidine gel?	1. Yes 2. No	
302	What did you apply to your new-born umbilical cord?	1. chlorhexidine gel 2.Butter 3. Vaseline 4.Oil 5.Animal dung 6.Nothing apply 7. Others(specify)_____	
303	What is the primary purpose of using chlorhexidine gel on a newborn's umbilical cord stump?	1. To promote faster healing 2.To prevent infection 3.To relieve pain 4.I don't know	
304	When should stop using chlorhexidine gel on the umbilical cord?	1.When the cord is dry 2.When the cord is red 3.When the cord falls off 4.After 7 days 5. I don't know	
305	How often should chlorhexidine be applied to the umbilical cord?	1. Once a day 2. Twice a day 3. After every diaper change 4. I don't know	

306	What are the signs of an infected umbilical cord?	1.Redness, swelling, and pus around the cord 2. Dryness and cracking of the cord 3. Bleeding from the cord 4) I don't know	
307	What should do if you notice excessive redness or discharge from the umbilical cord stump after using chlorhexidine gel?	1.Continue applying the gel as usual 2.Apply more gel to the area 3.Consult a healthcare provider 4.Stop all applications immediately	
308	How should chlorhexidine gel be applied to the umbilical cord?	1.With a cotton swab 2. With a clean finger 3. Directly from the tube 4.I don't know	

IV. Attitude of mothers on chlorhexidine gel

SN	QUESTION	RESPONSE	Code
401	Do you believe that using chlorhexidine for umbilical cord care is important for your baby's health?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	

402	Do you believe that using chlorhexidine gel is better than traditional methods for cord care?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	
403	Do you think chlorhexidine gel is safe for newborns?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	
404	Do you believe that using chlorhexidine gel is important for preventing umbilical cord infections in newborns?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	
405	Do you think hand washing required before applying chlorhexidine gel?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	
406	Do you believe after applying chlorhexidine gel no need to rinse the umbilical cord stump?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	

407	Do you recommend chlorhexidine gel to other mothers for umbilical cord care?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	
408	Do you think applying chlorhexidine for umbilical cord care have no side effect?	1.Strongly disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly agree	

Thank you for your participation!!

Annex III: - Consent form and Information sheet (Afan Oromo version)

Akkam jirtu maqaan koo----------. Ani Yunivarsiitii Arsii Kolleejjii Saayinsii Fayyaa keessatti barattuu digrii lammafa fayyaa walhormata irratti barattuf raga kan funanuu dhaf. Haadholiin daa'imman umuriin isaanii ji'a jaha gad ta'e dhaabbilee fayyaa hawaasaa magaalaa Asellaa keessatti argaman biratti ittifayyadama dibata kiloorheksiidiinii fi wantoota kanaan walqabatan adda baasuuf kaayyeffadheen qorannoo gaggeessaa jira. Odeeffannoon ani walitti qabu tajaajila fayyaa karoorfachuuf dhaabbata keessan akka waliigalaatti ni gargaara. Amma qorannoof akka tasaa filatamtee jirta. Gaaffiiwwan yeroo baay'ee gara daqiiqaa 25 hanga 35 fudhatu. Kaayyoon qorannichaa: Haadholii daa'imman ji'a 0-6 ta'an dhaabbilee fayyaa hawaasaa magaalaa Asellaa keessatti argaman biratti beekumsa hojii kunuunsa dibata kiloorheksiidiinii fi wantoota kanaan walqabatan madaaluu.

Faayidaa qorannichaa: faayidaan kallattiin hirmaataa qorannichaa hin jiru. Haa ta'u malee, bu'aan qorannoo kanaa danqaa beekumsa shaakala kunuunsa dibata kiloorheksiidiinii adda baasuuf kan gargaaru yoo ta'u, rakkoo kana furuuf mala sagantaa mijataa ta'e ilaaluu keessatti galtee irratti gumaacha qaba. Balaa qorannichaa: Qorannicha kana irratti hirmaachuun balaa fi miidhaa tokkollee hin qabaatu. Mirga hirmaattotaa: qorannoo kana irratti hirmaachuu ykn hirmaachuu diduu mirga guutuu qabda eeyyee. Gaaffii hundaaf deebii kennuu dandeessa ykn gaaffii hin barbaanneef deebii kennuu dhiisuu dandeessa akkasumas yeroo barbaaddetti gaaffii fi deebii kana adda kutuu dandeessa. Gaaffii kamiyyuu kan siif ifa hin taane gaafachuu dandeessa. Iccitii: odeeffannoon dabarfame kamiyyuu iccitii ta'ee kan eegamu yoo ta'u, maqaan hin barreeffamu ykn hin ibsamu.

Qo'annaa kana irratti hirmaachuuf fedhii qabdaa? 1. Lakki (galateefadha).

2. Eeyyee (gaaffii fi deebii itti fufi

Maqaa nama qorannoo kana gaggessu: Sr Nigat Fannoo Bilbila: 0911995939 Email: nigatfano7@gmail.com

Annex IV: Afan Oromo Version Questionnaires

Koodii: _____

Maqaa nama raga funanuu_____

Maqaa dhabbata fayyaa_____ Guyyaa_____/____/2017 EC

Kutaa 1ffaa: Odeeffannoo haala hawaasummaa

S/N	Question	Response	Code
101	Umriin keessan meeqaa	_____	
102	Haala gaa'ilaa	1. Kan herumte 2. Kan hin herumne 3. Kan walihikan/kan garagara jiratan 4.Kan abban warra irra du'ee	
103	Saba	1. Oromoo 2. Amaara 3. Silxee 4. Guragee 5. Tigree 6.kan biro ha ibsamu_____	
104	Amanti kami?	1. Ortoodoksii 2. Muslima 3. Proteenstaantii 4.Kaatoolikii 5.Waqeefata	
105	Sadarka barumsa keessan?	1. Barumsa hin qabu 2. hanga kuta 8 kan baratte 3.kuta 9-12 kan barattee 4.Kolleji fi isaa oli kan barattee	

106	Sadarkaa baruumsa abba mana keeti?	1. Barumsa hin qabu 2. hanga kuta 8 kan baratte 3.kuta 9-12 kan barattee 4.Kolleji fi isaa oli kan barattee	
107	Hojin keessan maali?	1.mana keessa hojjadha 2.Qonnan bultuu dha 3.Hojjattuu mootumati 4.Dhabbata dhunfa/miti motumma keess hojjadha 5. Daldaltuu dha 6.Hoji guyya guyyaa 7.kan biroo(ha ibsamuu)_____	
108	Hoji abba mana keeti	1.Qonnan bula 2.Hojjata mootumma 3. Dhabbata dhunfa/miti motumma keess hojjadha 4. Daldala 5.Hojjata guyya guyyaa 6. kan biroo(ha ibsamuu)_____	
109	Umrii daa'ima	Ji'a_____	

Kutaa II: Odeeffanoo waa'ee ulfaa, da'uumsaa fi itti fayyadamiinsa tajaajila fayyaa ilaalchisee

SN	Gaffilee	Deebiiwwan	koodii
201	Haga amma ijollee meeqa desse?	_____	
202	Daa'imni kichu yeroo darbe keessa lubbun darbee jira	1. Eyyee 2. Lakkii	
203	Yeroo ulfa daa'ima kana kununsa dahumsa dura hordoffi taasiftee	1. Eyyee 2. Lakkii	
204	Si'a meeqa hordoffi ulfaa taasiftee	_____	
205	Essaa dessee	1. Dhabbata fayyattii 2. Manatti	
206	Ennuu si deesisee	1.Ogessa fayya 2. Desiftuu aadaa	
207	Haala kamiin dessee	1. kara gadamesssatti 2. Baqaqsaan yaaluu dhan	
208	Tajaajila dahumsa booda ogessii fayya sif godhee?	1. Eyyee 2. Lakkii	
209	Wa'ee akkata handhuura daa'ima irratti gorsaa sif kennan?	1. Eyyee 2. Lakkii	
210	Yeroo tajajila dahumsa buufata sif kennan dibata handhura daa'ima keeti diban jiruu ogessi fayya?	1. Eyyee 2. Lakkii	
211	Ogessi fayya dibata handhuura daa'imaa akka dibduf si kennee jira?	1. Eyyee 2.Lakkii	

212	Guyyaa meeqa daa'imni kee dibata handhuura dibameef?	Guyyaa_____	

Kutaa 3. Hubannoo haadhoolen haala qoricha kilorheeksadiin irratti qaban

SN	Gaaffii	Deebiii	Koodii
301	Qoricha haandhura irraa dibuuf mana yaalaa irraa nama kennamu irratti odeffanno qabda?	1. Eyyee 2. Lakkii	
302	Daa'ima keeti handhuura isaa irratti maali dibdeef?	1. Qoricha ogessi fayya naf kennee 2.Dhadhaa 3. Vaseline 4.Zaaytii 5.Dhoqqee loon 6. Itti waa dibee hin beekuu 7. Kan biro ha ibsamu___	
303	Faayida qoricha handhuura daa'ima dibuu maalidha?	1. Saffisaan fayyuu guddisuuf 2. Infeekshinii ittisuuf 3. Dhukkubbii hir'isuuf 4.Hin beeku	
304	Jeel kiloorheksiidiinii funyoo gadameessaa irratti fayyadamuu yoom dhaabuu qaba?	1.Yeroo funyoon gogu 2.Yeroo funyoon diimaa ta'u 3. Yeroo funyoon irraa kufe 4. Guyyaa 7 booda 5. Hin beeku	
305	Kiloorheksiidiin yeroo meeqa funyoo gadameessaa irratti dibamuu qaba?	1. Guyyaatti al tokko 2. Guyyaatti al lama 3. Jijjiirraa daayipparii hunda booda	

		4. Hin beeku	
306	Mallattoon funyoo gadameessaa dhukkuba kanaan qabame maali?	1.Diimachuu, dhiita'uu, fi dhangala'aa naannoo funyoo 2. Goguu fi caccabuu funyoo 3. Dhiigni funyoo irraa bahuu 4) Ani hin beeku	
307	Erga jeel kiloorheksiidiinii fayyadamtee booda garmalee diimaa ta'uu ykn dhangala'aan citaa funyoo gadameessaa irraa yoo hubatte maal gochuu qabda?	1.Akkuma barame jeelicha dibachuu itti fufaa 2.Jeel dabalataa naannoo sanatti dibachuu 3.Ogeessa fayyaa mariisisuu 4.Dibaa hunda hatattamaan dhaabuu	
308	Jeeliin kiloorheksiidiin akkamitti funyoo gadameessaa irratti dibamuu qaba?	1.Cuuphaa waliin 2. Quba qulqulluudhaan 3. Kallattiin tuubii irraa 4.Hin beeku	

Kutaa 4. Ilalchaa haati haala itti fayyadama qoricha kilorheeksadiin jedhamu irratti qabdu

SN	Gaaffii	Deebiii	Koodii
401	Dibata kiloorheksiidiinii handhuura daaimatif fayyadamuun fayyaa daa'ima keessaniif barbaachisaa ta'uu ni amantaa?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	
402	Jeel kiloorheksiidiin fayyadamuun mala aadaa caalaa gaarii ta'a jettanii amantaa?	1.Sirrii yaada kana walii hin galu	

		2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	
403	Jeel chlorhexidine daa'imman reefuu dhalataniif nageenya qaba jettanii yaaddu?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	
404	Daa'imman reefuu dhalatan irratti infekshinii handhuura ittisuuf jeel kiloorheksiidiinii fayyadamuun barbaachisaa ta'uu ni amantaa?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	
405	Osoo dibata handhuura kana hin dibin dura harka dhiqachuun ni barbachisa jette yadda?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	
406	Erga dibata handhuura dibnee booda handhuura da'iima dhiquun akka hin barbaachifne ni amanta?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala	

		5.Sirrri yaada kana walii gala	
407	Dubartotni biro dibata handhuura kana akka fayyadamanif ni gorsita?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	
408	Dibata kiloorheksiidiinii daa'imaaf handhuura dibuun miidhaa hin qabu jettanii yaaddu?	1.Sirrii yaada kana walii hin galu 2.yaada kana walii hin galu 3.Giddu galeessa 4.yaadaa kana waliigala 5.Sirrri yaada kana walii gala	

Hirmanna keessaniif galatooma!

Annex V. Amharic version Inform consent

የኔ ስም----------። በአርሲ ዩኒቨርሲቲ ጤና ሳይንስ ኮሌጅ የእናቶች እና የስነ ተዋልዶ ጤና የሁለተኛ ድግሪ ተማሪ ሚጃ ለማህብሰብ ነው። በደቡብ ምስራቅ ኢትዮጵያ አሰላ ከተማ ከ6 ወር በታች እድሜ ያላቸውን ጨቅላ ህጻናት ያላቸውን እናቶች የክሎረሄክሲዲን ጄል ወይም ቅባት ለእንብርት እንክብካቤ አጠቃቀማን እና ተያያዥ ምክንያቶችን ለመወሰን በመንግስታዊ ጤና ድርጅቶች ውስጥ የዳሰሳ ጥናት እያካሄድኩ ነው። የምሰበስበውሚጃ እርሶ የሚከቀማት ጤና ተቋምየተሳለጠየጤና አገልግሎቶችን ለማጠት **እና ለማቀድ** ይረዳል። አሁን ለዳሰሳ ጥናቱ በዘፈቀደ ተሚጠዋል። ጥያቄዎቹ አብዛኛውን ጊዜ ከ25 እስከ 35 ደቂቃዎች ይወስዳሉ። የጥናቱ አላማ በደቡብ ምስራቅ ኢትዮጵያ አሰላ ከተማየህዝብ ጤና ተቋማት ከ6 ወር በታች እድሜያላቸውጨቅላ ህፃናት ያላቸው እናቶች የክሎረሄክሲዲን የትብት ቅባት አጠቀቀም እና ተያያዥ ምክንያቶችን ለማ ምማ ም።

የጥናቱ ጥቅም - የጥናቱ ተሳታፊ ቀጥተኛ ጥቅም ባይኖረውየዚ ጥናት ውጤት የዚህ ጥናት ውጤት የትብት ቅባት አጠቃቀምእና የእውቀት እንቅፋትን ለማለየት ይረዳል እና ችግሩን ለመፍታት ምቹ የፕሮግራም አቀራረብን ግምት ውስጥ በማስገባት ለግብአት አስተዋፅኦ ያደርጋል. በዚህ ጥናት ውስጥ ማሳተፍ ምንም አይነት አደጋ ወይም ጉዳት አይኖረውም። የተሳታፊዎች ማብት፡ በዚህ ጥናት ላይ ለማሳተፍ ወይምላለማሳተፍ ሙሉ ማብት አለቸው። ለሁሉም ጥያቄዎች ምላሽ ማስጠት ወይም ለሚፈልጓቸው ጥያቄዎች ሜልስ ላይሰጡይችላሉ እና በፈለጉት ጊዜ ቃለ ማጪይቁን ማቆም ይችላሉ። ለእርስዎ ግልጽ ያልሆነ ማንኛውንም ጥያቄ ማጠየቅ ይችላሉ. ምስጢራዊነት፡ ማንኛውምየተላለፈ ሚጃ በሚስጥር ይጠበቃል እና ስሞት አይጻፉምአይገለጽም።

በዚህ ጥናት ለማሳተፍ ፈቃደኛ ነዎት? 1. አይ (አማሳግናለው) 2. አዎ (ቃለ ማጪይቁን ይቀጥሉ)

የዋናው ሚሚሪ ስም ንጋት ፋኖ ሞባይል ስልክ ቁጥር 0911995939 ኢሜል፡ nigatfano7@gmail.com

Annex VI፡ Amharic version questioners

ኮድ ቁጥር፡ _____

የ ሚ ጃ ሰ ብሳ ቢ ውስ ም_____

የ ጤፍ ተ ቋ ምስ ም_____ ቀ ን _____/____/2017 ዓ.ም

ክ ፍ ል አ ን ድ፡ የ ሶ ሺ ዮ ስ ነ -ሕ ዝ ብ ሚ ጃ

ተ/ቁ	ጥ ያ ቄ	ም ላ ሽ	ዝ ለ ል
101	ም ላ ሽ ሰ ጪ ዎ ች ዕ ድ ሜ(በ ዓ ሙ ታ ት ውስ ጥ)	_____	
102	የ ጋ ብ ቻ ሁ ኔ ታ	1. 1. ያ ገ ባ 2. 2. ያ ላ ገ ባ 3. 3. የ ተ ፋ ታ/የ ተ ለ ያ የ 4. 4. የ ሞ ተ በ ት	
103	ብ ሄ ር	1. ኦ ሮ ሞ 2. አ ማ ራ 3. ስ ል ጤ 4. ጉ ራ ጌ 5. ት ግ ሬ 6.ሌ ሎ ች	
104	ሃ ይ ማ ኖ ት	1. ኦ ር ቶ ዶ ክ ስ 2. ሞ ስ ሊ ም	

		3. ፕሮቴስታንት 4. ካቶሊክ 5.ዋቄፋታ	
105	የእናቶች የትምህርት ደረጃ	1. ያልተማረ 2. የመጀመሪያ ደረጃ ትምህርት 3.የሁለተኛ ደረጃ ትምህርት 4.የኮሌጅ ትምህርት እና በላይ	
106	የባለቤቶት የትምህርት ደረጃ	1. ያልተማረ 2. የመጀመሪያ ደረጃ ትምህርት 3.የሁለተኛ ደረጃ ትምህርት 4. የኮሌጅ ትምህርት እና ከዚያ በላይ	
107	የእናትየ ውየ ሞያ ደረጃ	1. የቤት እማኬት 2.ገበሬ 3. የመንግስት ሰራተኛ 4.የግል ዘርፍ/መንግስታዊ ያልሆነ ድርጅት 5. ነጋዴ 6.የቀን ሰራተኛ 7.ሌላ (ይግለጹ)_____	
108	የባለቤቶት ሞያ	1.ገበሬ 2. የመንግስት ሰራተኛ 3.የግል ዘርፍ/መንግስታዊ ያልሆነ ድርጅት 4. ነጋዴ 5. የቀን ሰራተኛ	

		6.ሌላ (ይግለጹ)_____	
109	የ ል ጆች ዕ ድሜ	_____ወር	

ክፍል II፡ የ ጽ ንስና ጡ ፍ አ ገ ል ግ ሎ ት ተ ዛ ማ ጅ ም ክ ን ያ ቶ ች

ተ/ ቁ	ጥ ያ ቄ	ም ላ ሽ	ዝ ለ ል
201	ስ ን ት ል ጆ ች አ ሎ ት?	_____	
202	በ አ ራ ስ ነ ቱ የ ጡ ፋ ቦ ት ል ጅ አ ለ?	1. አ ዎ 2. አ ይ	
203	አ ሁ ን ላ ለ ው ል ጅ ነ ፍ ሰ ጡ ር በ ነ በ ሩ በ ት ጊ ዜ የ ቅ ድ መ ወ ሊ ድ እ ን ክ ብ ካ ቤ ክ ት ት ል አ ድ ር ገ ዋ ል?	1. አ ዎ 2. አ ይ	
204	ስ ን ት ግ ዜ የ ቅ ድ መ ወ ሊ ድ ክ ት ት ል አ ደ ረ ጉ?	_____	
205	የ ወ ለ ዱ በ ት ቦ ታ?	1. ሆ ስ ፒ ታ ል 2. ጡ ፍ ጣ ቢ ያ 3.ቤ ት	
206	ያ ዋ ለ ዶ ት ማ ን?	1.የ ጡ ፍ ባ ለ ሙ ያ 2. የ ል ምድ አ ዋ ላ ጅ	
207	በ ም ን ወ ለ ዱ	1. በ ም ጥ 2. በ አ ፕ ራ ሲ ዮ ን	
208	በ ወ ለ ዱ በ 7 ቀ ና ት ው ስ ጥ ከ ወ ሊ ድ በ ኃ ላ የ ወ ሊ ድ እ ን ክ ብ ካ ቤ በ ጡ ፍ ባ ለ ሙ ያ ዎ ች አ ግ ኝ ተ ዋ ል?	1. አ ዎ 2. አ ይ	
209	ከ ወ ሊ ድ በ ኃ ላ በ ሚ ሰ ጡ ው አ ገ ል ግ ሎ ት ወ ቅ ት ስ ለ እ ት ብ ት እ ን ክ ብ ካ ቤ ም ክ ር አ ግ ኝ ተ ዋ ል?	1. አ ዎ 2. አ ይ	
210	ከ ወ ሊ ድ በ ኃ ላ የ ጡ ፍ ባ ለ ሙ ያ የ እ ት ብ ት	1. አ ዎ 2. አ ይ	

	ቅባት ለልጅዎ ቀብተዋል?		
211	ከወሊድ በኃላ የጡፍ ባለሞያ የእትብት ቅባትን ይዘውእንድሄዱሰተውታል?	1. አዎ 2. አይ	
212	የእትብት ቅባትን ለልጅ ለስንት ቀናት ተጠቀሞ	_____ ቀናት	

ክፍል III. በክሎረሄክሲዲን ጄል ልምምድ ላይ የእናቶች እውቀት

ተ/ቁ	ጥያቄ	ምላሽ	ዝለል
301	ስለ ክሎረክሲዲን ጄል/የእትብት ቅባት ሚጃ አልዎት?	1. አዎ 2. አይ	
302	አዲስ ለተወለደው ሕፃን እትብት ምን ቀብተዋል?	1.ክሎረክሲዲን ጄል 2.ቅቤ 3. ቫዝሊን 4. ዘይት 5.የእንስሳት እበት 6.ምንምአልቀባሁም 7. ሌሎች (ይግለጹ)_____	
303	አዲስ በተወለደ ሕፃን የእትብት ቅባት ማከቀምዋና ዓላማውምንድን ነው?	1. በፍጥነ ት ለማ ገ ም 2. ኢንፌክሽን ለማላከል 3. ህማምን ለማስታገ ስ	

		4. አላውቅም	
304	የእትብት ቅባት ማከሙ ምቹ ያለብኝ መቼ ነው?	1. እትብት እስኪደርቅ 2. እትብቱ ቀይ ሲሆን 3. እትብቱ ሲወድቅ 4. ከ 7 ቀናት በኋላ 5. አላውቅም	
305	የእትብት ቅባትን ለምን ያህል ጊዜ ወደ እትብቱ ላይ ይቀባሉ?	1. በቀን አንድ ጊዜ 2. በቀን ሁለት ጊዜ 3. ዳይፐር በቀየርኩ ቁጥር 4. አላውቅም	
306	የተበከለው እትብት ምልክቶች ምንድ ናቸው?	1. እትብት አካባቢ መቅላት፣ ሽታ እና መግል 2. እትብት መድረቅ እና ማሳከክ 3. እትብት ደም መፍሰስ 4) አላውቅም	
307	የእትብት ቅባት ከተጠቀሙ በኋላ ከማከን በላይ መቅላት ወይም ከእትብት ውስጥ ፈሳሽ ሲወጣ ምን ሞድረግ ይጠበቅብዎታል?	1.የእትብት ቅባት መቀባቱን ይቀጥሉ 2.በአካባቢው ላይ ተጨማሪ ቅባት ይቀባሉ 3. ጡፍ ባለመያን አሻራለው 4.ወዲያውኑ ቅባቱን አቆማለው	
308	የእትብት ቅባትን ለመቀባት ምን ይጠቀማሉ?	1.በጥጥ 2. በንጹህ ጣት 3. በመዳኒቱ ጠብታ እቀባለው 4. አላውቅም	

ክፍል IV. ስለ ክሎረክሲዲን ጄል ልምምድ የእናቶች አመለካከት

ተ/ቁ	ጥያቄ	ምላሽ	ዝለል
401	የእትብት ቅባትን ለልጅ እትብት እንክብካቤ ማከቀም ለልጅዎ ጤፍ ጠቃሚ ነው ብለው ያምናሉ?	1. በጣምአልስማምም 2.አልስማምም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	
402	የእትብት ቅባት ከባህላዊ ዘዴዎች የተሻለ ለእትብት ጥቅምአለውብለውያምናሉ?	1. በጣምአልስማምም 2.አልስማምም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	
403	የእትብት ቅባት ለአራስ ሕፃናት ደህንነቱ የተጠበቀ ነውብለውያስባሉ?	1. በጣምአልስማምም 2.አልስማምም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	
404	የእትብት ቅባትን ማከቀም አዲስ ለሚወለዱ ሕፃናት ላይ የሚከሰተውን የእትብት ማከል ለማላከል ጠቃሚነ ውብለውያምናሉ?	1. በጣምአልስማምም 2.አልስማምም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	
405	የእትብት ቅባት ከመቀባቱ በፊት እጅን ማታጠብአስፈላጊ ነውብለውያምናሉ?	1. በጣምአልስማምም 2.አልስማምም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ	

		5. በጣም እስማማለሁ	
406	የእብርት ቅባት ከተጠቀምን በኋላ የእትብት ቁስል ማዳበን እያስፈልግመብለውያምናሉ?	1. በጣምአልስማማም 2.አልስማማም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	
407	የእትብት ቅባትን ለሌላ ሰው እንዲጠቀሙ ይመክራሉ?	1. በጣምአልስማማም 2.አልስማማም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	
408	የእትብት ቅባት ማጠቀም ለእትብቱ የጎንዮሽ ጉዳት የለውምብለውያስባሉ?	1. በጣምአልስማማም 2.አልስማማም 3. እርግጠኛ አይደለሁም 4. እስማማለሁ 5. በጣምእስማማለሁ	

ለተሳትፎዎ እናመሰግናለን!

ARSI UNIVERSITY

COLLEGE OF HEALTH SCIENCES DEPARTMENT OF MIDWIFERY

Name of investigator	Nigat Fano (BSc)
Name of advisors	1.Dr Daniel Bekele 2. Mr. Hasan Adem
Title of the research project	Utilization of chlorhexidine gel for umbilical cord care and associated factors among mothers of infants aged less than six months attending public health facilities in Asella town, Southeast Ethiopia
Duration of the project	October 12, 2024 to November 12, 2024
Study setting	Asella town

Total cost of the project	32,310 Ethiopia Birrs
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Declaration of Investigator

I, the undersigned student of Master of Maternal and Reproductive Health, declare that this research thesis is my original work in partial fulfillment of the requirement for the degree of Master of science in Maternal and Reproductive Health to my best knowledge.

Name of investigator: ___Nigat Fanno_____

Signature: _____ Date_____

Declaration of Advisors

We, the undersigned Advisors, declare that this research thesis is our original work in partial fulfillment of the requirement for the degree of Master of science in Maternal and Reproductive Health for the stated student above to our best knowledge. We confirmed that this thesis is ready for defense with our approval as the university advisor(s).

Date of Submission: _____

Name of primary Advisors:	Signatures	Date
1. _____	_____	_____
Name of secondary Advisors:	Signatures	Date
2. _____	_____	_____

Examining Board Approval

We, the undersigned Examining board, approved that this research thesis is original work with the basic scientific merits for partial fulfillment of the requirement for the degree of Master of science in Maternal and Reproductive Health for the stated student above to our best knowledge. We confirmed that this thesis is sufficient for the student's promotion to the higher level.

Name of External Examiner Signatures Date

_____ _____

_____

Name of Internal Examiner Signatures Date

_____ _____

_____

Name of Department Head Signatures Date