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Genital Hygiene Practice and Its Associated Factors among Postnatal Mothers at Public Hospitals in West Shewa Zone, Ethiopia: An Implication for action

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Abstract:

Background: Genital hygiene practice as a series of procedures designed to eliminate excess waste from the female genital area, and clothing appropriately in order to enhance comfort and prevent genital infections. Even though appropriate genital hygiene practices are one of the methods to prevent postpartum infections, genital hygiene cares are frequently overlooked. The objective of this study was to assess the postpartum women's practice of genital hygiene and its associated factors at public hospitals in west shewa zone, Oromia, Ethiopia, 2023.

Methods: A facility-based cross-sectional study was conducted in March 2023 at public hospitals with 371 postnatal mothers selected through systematic random sampling. Data were collected using a pretested structured interviewer-administered questionnaire and analyzed using SPSS version 25. Bivariate and multivariable binary logistic regressions identified factors associated with good genital hygiene practices, defined as scoring above/equal the median on practice-related questions.

Results: Three hundred and seventy (99.7%) participants completed the questionnaire. The proportion of postnatal mothers with good genital hygiene practice was 31.4% (95% CI 26.51, 35.90). Urban residence (AOR 1.71, 95%CI 1.05, 3.52), Attending secondary school (AOR 2.61, 95%CI 1.15, 6.42) and college (AOR 2.96, 95%CI 1.22, 7.20), >5065 ETB monthly income (AOR 2.25, 95%CI 1.23, 4.12), exposure to information (AOR 2.46, 95%CI 1.82, 3.59), husband support (AOR 1.16, 95% CI 1.11, 2.70) and good knowledge of genital hygiene (AOR 2.27, 95% CI 1.30, 3.94) have statistically significant association with genital hygiene practice.

Conclusions: Only one-third of the respondents had good genital hygiene practices. Urban residence, attending secondary school and college, monthly income, exposure to information, husband support and good genital hygiene knowledge have statistically significant association with good genital hygiene practice. The findings suggest that promoting female education, providing education on genital hygiene care, and enhancing income-generating activities for postnatal women are essential.

Key words: Genital Hygiene; Practice; Factors; Postnatal mother; West Shewa Zone; Public Hospitals

Introduction

The genital hygiene practice involves procedures to eliminate excess waste (dead cells, fluids, and remnants of urine and feces) from the female genital area, aiming to enhance comfort and wellbeing while preventing genital infections [1–3]. This practice is particularly crucial during the postpartum period due to the presence of various bodily wastes (blood, lochia, sweat, urine) that facilitate infection [4]. Additionally, during this period, mothers often use materials like unwashed or improperly dried cloths, increasing infection risks via the genito-urinary tract or birth wounds[5–7].

Studies have shown that poor genital hygiene practices contribute to female genital health problems, including surgical site infections, urinary tract infections, and sexually transmitted infections [3,8–10]. These infections are linked to practices like douching, inadequate hand washing, inappropriate underwear, use of commercial hygiene products, and incorrect perineal cleaning after toileting [2,10–12]. For instance, a Turkish study found that women who practiced inadequate genital hygiene had a 3.9 times higher risk of abnormal vaginal discharge [13]. Wearing tight jeans/pants was a significant factor in the occurrence of infection [14] while wearing cotton underwear reduces it [10]. Underwear should be loose, cotton-made, and changed daily, especially during periods of increased vaginal discharge like postpartum [14–16].

Ethiopia, with a maternal mortality rate of 412 per 100,000 live births in 2016, faces high maternal mortality, two-thirds occurring postpartum. Postpartum infection, often due to unhygienic practices, is the third leading cause of maternal deaths in this period [17].

Genital hygiene practices significantly aid in preventing genital infections and maintaining genital health [18]. However, these practices can be influenced by socio-demographic, environmental, health, and knowledge factors [6,10,19–21]. Studies from various countries reveal varying levels of good genital hygiene practices, with percentages ranging from 25.3% in Nepal [22] to 68.5% in Indonesia 68.5% [21]. Additionally, in Cameroon 27.3% [23], and in Uganda 36% of the respondents [2] had good genital hygiene practices.

Ethiopia has been working to improve health care and reduce maternal mortality through inclusive and affordable healthcare initiatives [24]. However, genital hygiene practices remain neglected in both healthcare services and research. Little is known about postpartum women's genital hygiene practices in Ethiopia, particularly in the west shewa zone, where no related research has been conducted. This study aims to assess the status of genital hygiene practices and their associated factors among postnatal mothers in this region.

Methods:

Study Design, Setting and Participants

A facility-based cross-sectional study was conducted from March 1 to 30, 2023, at nine public hospitals in west shewa zone, Oromia Regional State. The study involved postnatal mothers who gave birth within six weeks prior to the data collection and attended the hospitals for postnatal care or their baby's first immunization during this period.

Sample size determination and Sampling technique

The sample size was calculated using the single population proportion formula with the assumption that 50% of postnatal mothers practice good genital hygiene (P = 50%), a 95% confidence level, and a 5% margin of error. This resulted in an initial sample size (ni) of 384. Based on postnatal registration data, a total of 2711 postnatal mothers were served in the selected hospitals during the month prior to the data collection period. Considering a finite population correction (N = 2711) and a 10% non-response rate, the final sample size was adjusted to 371. Participants were selected using the systematic random sampling method. The sample size was proportionally allocated to each hospital (Ambo GH=39, Gudar PH=33, Gedo GH=40, Bako PH=50, Ambo University RH=55, Ginchi PH=35, Inchini PH=41, Gojo PH=41 and Gindeberet PH=37) based on the number of postnatal women they served in the month immediately before the data collection period. The sampling interval (k) for each hospital was determined by dividing the total population of each hospital by the sample size allocated to that hospital. Every K^{th} postnatal mother was selected after the first was chosen by the lottery method from the initial interval.

Study variables

Dependent Variable: Genital hygiene practice- Practice of genital hygiene was assessed out of 17 practice-specific questions adopted from several literatures. Eventhough the items were 17, only the items which all participants responded for (14 items) were used to categorize the practice level. Each correct response scored as 1 point, whereas any incorrect practice response scored as 0, and the possible score ranges from 0 to 14. The participant's median of the practice score were 8 and it is used as cut-off point to categorize the practice. The participant who scored less than 8 categorized as having poor practice, while those who scored equal or greater than 8 categorized as having good practice.

Independent Variables: Socio-demographic characteristics (age, educational status, religion, marital status, ethnicity, occupation, residency, household income), environmental factors (access to latrine, washing facility, clean water, husband support, environmental sanitation), mother's health factors (stress level, disability), and mother's knowledge factors (exposure to genital hygiene information, perception of genital health talk as taboo, knowledge level). Knowledge level was assessed out of 9 knowleddge-specific questions adopted from prior studies. Each correct response scored as 1 point, whereas any incorrect knowledge response scored as 0, and the possible score ranges from 0 to 9. The participant's median of the knowledge score was 6 and it is used as cut-off point to categorize the knowledge level. The participant who scored less than 6 categorized as having poor knowledge, while those who scored equal or greater than 6 categorized as having good knowledge.

Data collection tool, techniques and measurement

Data was collected using an interviewer-administered structured questionnaire adapted from the Genital Hygiene Behavior Inventory and other related studies [10,11,15,21,25]. The questionnaire covered socio-demographic characteristics, genital hygiene practice, mother's health, environmental factors, and knowledge-related questions. It was prepared in English, translated into Afaan Oromoo, and back-translated to English for consistency.

The tool's validity was reviewed by maternal and reproductive health experts and pretested for clarity and relevance. The pretest data showed a Cronbach's alpha of 0.83 for overall pretest and 0.80 for practice section, indicating good reliability of the items to assess the practice. Data collectors and supervisors received two days of training on interviewing techniques and ethical considerations.

Data Processing and Analysis

Data was checked for completeness, coded in Excel, and analyzed using SPSS version 25. Initial data cleaning, frequency cross-tabulations, and categorization of continuous variables were performed. The Shapiro-Wilk test indicated non-normal data distribution ($p = 0.011$), so the median was used to categorize practice levels. Outcome variables were coded as "1" for good practice and "0" for poor practice.

Binary logistic regression was employed to identify associations between dependent and independent variables. Multi-collinearity was checked using the Variance Inflation Factor (VIF), with values ranging from 1.2 to 4.8, indicating no significant collinearity. Variables with $p < 0.25$ in bivariate analysis were included in multivariable logistic regression. Variable like age, ethnicity and religion were excuded from the model because they didn't have significant associacion as their P-value were > 0.25. Model goodness-of-fit was verified using the Hosmer-Lemeshow test ($p = 0.105$). The model explanatory power is strong as 41% of the variability in the outcome is explained by independent variables in the model (Nagelkerke R^2 =0.41). Associations were expressed as adjusted odds ratios (AOR) with 95% confidence intervals (CI) at $p < 0.05$.

Ethical consideration:

The study protocol received approval from the Institutional Review Board (IRB) of Ambo University College of Medicine and Health Science (reference number AU/PGC/583/2023). Necessary permissions were obtained from relevant authorities. In addition, to maintain the research policy of Ethiopia and ambo University's research guideline, a formal letter of cooperation from the Ambo district health office and Kebeles administration was assured prior to data collection. Furthermore , all methods were performed in accordance with the relevant guidelines and regulations, including the Declaration of Helsinki. Informed consent was obtained

from all participants prior to inclusion in the study. Then the data collectors informed the respondents about the purpose of the study, that it was confidential, and that they can interrupt the interview whenever they wish. Informed consent was obtained from each respondent before the initiation of the interview. During data collection, the national protocol set by the Ethiopian Ministry of Health to prevent COVID-19 transmissions was followed.

Results

Socio-demographic Characteristics of Study Participants

This study involves 370 respondents, achieving a 99.7% response rate. The mean age of participants was 28.02 years, with a standard deviation of ±4.8 years. A substantial majority (91.6%) were married and living with their husbands. Educationally, 29.8% of women and 44.3% of their husbands attended college or higher, while 22.4% of women and 12.6% of their husbands had no formal education. The majority (72.4%) resided in urban areas (Table 1).

Table 1: Socio-demographic characteristics of postnatal mothers at public hospitals in west shewa zone, Ethiopia

Variables	Category	Frequency	Percent
Age	15-19	5	1.3
	20-24	82	22.1
	25-29	145	39.2
	30-34	79	21.3
	35-39	59	15.9
Marital status	Single	31	8.4
	Married	339	91.6
Ethnicity	Oromo	296	80
	Amara	49	13.2
	Gurage	20	5.4
	Others*	5	1.3
Religion	Protestant	188	50.8
	Orthodox	147	39.7
	Catholic	5	1.3
	Muslim	15	4.0
	Others**	15	4.0
Education of Mothers	No formal education	83	22.4
	Primary school	88	23.8
	Secondary school	89	24
	College diploma & above	110	29.8
Education of Husband	No formal education	43	12.6
	Primary school	67	19.8
	Secondary school	79	23.3
	College diploma &above	150	44.3
Occupation	House wife	158	42.7
	Government Employed	91	24.6
	Self employed	111	30
	Others***	10	2.7

Residence place	Rural	102	27.6
	Urban	268	72.4
Family Income	<3457 ETB	126	34.1
	3457-5065 ETB	108	29.2
	>5065 ETB	136	36.7

Mother's Knowledge and Health-Related Factors:

Less than half (38.9%) of the women were aware of genital hygiene care (Figure 1), with friends and healthcare providers being the primary sources of information (15.9% and 14.9%, respectively).

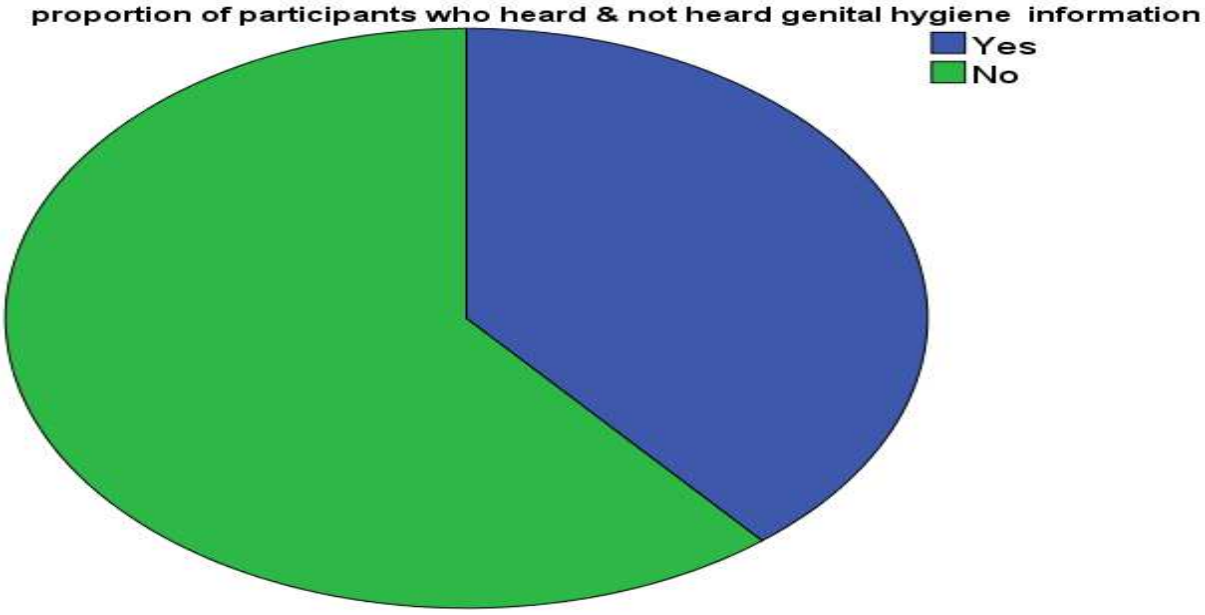


Figure 1 Proportion of participants who heard and not heard genital hygiene information

Less than half (36.5) of them had good knowledge of genital hygiene care (Table 2).

Table 2: Knowledge related factors of genital hygiene practice among postnatal mothers at public hospitals in west shewa zone, Ethiopia

Items	Category	Frequency	Percent
Source of genital hygiene related information?	Mother	15	4.1
	Friend	59	15.9
	Health care providers	50	13.5
	Social media	10	2.7
	Multiple source	10	2.7
When do the health care providers provide you the information?	Before Pregnancy	5	10
	During pregnancy (ANC)	15	30
	After delivery (PNC)	30	60
Do you think talking about genital health is a taboo/improper?	Yes	213	57.6
	No	157	42.4

Category of knowledge of the respondents	Poor knowledge	235	63.5
	Good knowledge	135	36.5

In terms of health status, 5.4% had disabilities, and 88.6% experienced stress, with 32.4% having moderate and 24.1% high stress levels (Table 3).

Table 3 Mother's health related factors of genital hygiene practice among postnatal mothers at public hospitals in west shewa zone, Ethiopia

Variables	Category	Frequency	Percent
Do you have any health disability?	Yes	15	4.1
	No	355	95.9
Which type of disability?	Leg disability	5	33.3
	Hand disability	10	66.7
Stress level of the respondents	No stress	42	11.4
	Low stress	75	20.3
	Moderate Stress	120	32.4
	High stress	89	24.1
	Very high stress	44	11.9

Environmental Related Factors

Most respondents (95.5%) delivered their most recent child in a health facility. However, 61.9% lacked washing facilities near the latrine, and 66.5% received no support from their husbands regarding genital hygiene care. A significant portion (90.5%) lived in areas with poor sanitation, and 71.6% had access to clean water (Table 4).

Table 4: Environmental related factors of genital hygiene practice among postnatal mothers at public hospitals in west shewa zone, Ethiopia

Items	Category	Frequency	Percent
Where did you deliver your most recent baby?	Home	15	4.1
	Health facility	355	95.9
Do you have washing facility near to the latrine?	Yes	141	38.1
	No	229	61.9
Does your husband support you on genital hygiene care?	Yes	133	35.9
	No	237	64.1
Category of environmental sanitation	Poor environmental sanitation	335	90.5
	Adequate environmental sanitation	35	9.5
Access to clean water	No access of clean water	105	28.4
	Access of clean water	265	71.6

Genital hygiene practice of postnatal mothers

The median score for genital hygiene practices was 8.0. Only 31.4% (95% CI 26.51, 35.90) demonstrated good practices, while 68.6% showed poor practices. Specific practices included 34.5% using sitzbaths, 42.7% washing hands before genital hygiene care, 32.7% drying the genital area after washing, and 59.2% performing internal vaginal washing (douching). About 51.6% cleaned the perineal area from front to back. Of those using reusable sanitary pads, only 23.3% dried them in direct sunlight. Less than half (41.6%) wore loose underwear postpartum, and only 20% used feminine hygiene products (Table 5).

Table 5: Practice of genital hygiene among postnatal mother at public hospitals in west shewa zone, Ethiopia

Variables	Category	Frequency	Percent
Did you use sitz bath after delivery?	Yes	128	34.5
	No	242	65.4
Did you wash your hands before genital hygiene care?	Yes	158	42.7
	No	212	57.3
Did you wash your hands after genital hygiene care?	Yes	266	71.9
	No	104	28.1
Did you wash your External Genital area? N=370	Yes	345	93.2
	No	25	6.8
Did you perform Internal vaginal washing/douching?	Yes	219	59.2
	No	151	40.8
Which material you used to wash your internal vaginal washing/douching?	Water only	141	64.4
	Water & Soap/Shampoo	78	35.6
To which direction you cleaned your perineal area?	Front to back	191	51.6
	Back to forward	78	21.1
	Both randomly	101	27.3
Which material you used to clean perineal area after toilet?	Tissue paper	91	24.6
	Cloth	8	2.2
	Writing paper	101	27.3
	Water	152	41
	Multiple materials	13	3.5
	Other	5	1.4
Did you dry when you washed either internal or external genital area?	Yes	121	32.7
	No	249	67.3
Did you remove genital hair during postpartum period?	Yes	265	71.6
	No	105	28.4
By what frequency you removed genital hairs?	At least once in every 15 days	76	28.7
	Monthly	87	32.8
	Once in 2 months/more	102	38.5
What type of sanitary pad/absorbent material you used during postpartum period?	Disposable	267	72.1
	Reusable	25	6.7
	Piece of clothes	45	12.2

	Multiple materials	33	9.0
What you did before using non disposable sanitary pads? N=103	Wash and dry in home	75	72.8
	Wash & dry by direct sun exposure	24	23.3
	Wash and dry under garden	4	3.9
By what frequency you Changed the sanitary pad/absorbent material during postpartum period? N=370	Twice/more per day	254	68.7
	Once in a day	106	28.6
	Every Other day	10	2.7
Which type of underwear you usually used during postpartum period? N=370	Loose	154	41.6
	Thight	176	47.6
	Both randomly	40	10.8
By what frequency you Changed underwear during postpartum period? N=370	Twice/more per day	80	21.6
	Once per day	140	37.8
	Every Other day	83	22.5
	Once a week/over	67	18.1
Did you use feminine hygiene products/cosmetics for genital area? N=370	Yes	74	20
	No	296	80
Overall genital hygiene practice	Good	116	31.4%
	Poor	254	68.6%

Bivariate and multivariable logistic Regression analysis on genital hygiene practice among postnatal mothers in Oromia, Ethiopia, 2023

Bivariate regression identified 12 variables associated with genital hygiene practices at a p-value 0.25. As recommended by Hosmer and Lemeshow, $p<0.25$ is preferred in screening variables for multivariable logistic regression to avoid excluding potential important variables. Multivariable regression revealed six significant factors including education, residence, income, knowledge of genital hygiene, information of genital hygiene and husband support.

According to this study, Mothers in urban areas are 1.71 (95% CI 1.05, 3.52) times more likely to have good hygiene practices than those in rural areas. Education level also plays a role; mothers with secondary education (AOR 2.61 (95% CI 1.15, 6.42)) and college or higher (AOR 2.96 (95% CI 1.22, 7.20)) have better genital hygiene practices than those without formal education. Income is another factor; those earning $\geq$5065 ETB per month are 2.25 (95% CI 1.23, 4.12) times more likely to practice good hygiene than those earning <3457 ETB. Additionally, mothers informed about genital hygiene are 2.46 (95% CI 1.82, 3.59) times more likely to maintain good genital hygiene, and those with good knowledge of genital hygiene are 2.27 (95%CI 1.30, 3.94) times more likely to practice it properly. Finally, husband support increases the likelihood of good hygiene practices by 1.16 (95%CI 1.11, 2.70) times (Table 6).

Table 6 Bivariate and Multivariable regression analysis of factors associated with genital hygiene practice among postnatal mothers at public hospitals in west shewa zone, Ethiopia

	Categories	Practice of genital hygiene		COR(95%CI)	AOR(95%CI)
		Good	Poor		
Marital status	Married	109(34%)	212(66%)	**3.08(1.34,7.09) ***	
	Single	7(14.3%)	42(85.7%)	1	
Education of mother	College diploma & above	56(50.9%)	54(49.1%)	**3.73(1.45,9.56) ***	**2.96(1.22, 7.20) * ***
	Secondary school	30(33.7%)	59(66.3%)	**2.25(0.82,6.19) ***	**2.61(1.15, 6.42) * ***
	Primary school	20(22.7%)	68(77.3%)	**1.14(0.41,3.21) ***	1.56(0.66, 3.72)
	No formal education	10(12%)	73(88%)	1	1
Residence place	Urban	101(37.7%)	167(62.3%)	**3.51(1.92, 6.40) ***	**1.71(1.05, 3.52) * ***
	Rural	15(14.7%)	87(85.3%)	1	
Family monthly income	>5065 ETB	63(46.3%)	73(53.7%)	**3.49 (2.01, 6.06) ***	**2.25(1.23, 4.12) * ***
	3457-5065 ETB	28(25.9%)	80(74.1%)	1.41(0.76, 2.61)	1.01(0.52, 2.00)
	<3457 ETB	25(19.8%)	101(80.2%)	1	1
Information of genital hygiene	Yes	67(46.5%)	77(53.5%)	**3.14(1.99, 4.96) ***	**2.46(1.82, 3.59) * ***
	No	49(21.7%)	177(78.3%)	1	1
Talking about genital health is taboo	No	64(40.8%)	93(59.2%)	**2.13(1.36,3.33) ***	
	Yes	52(24.4%)	161(75.6%)	1	
Knowledge of genital hygiene	Good knowledge	65(48.1%)	70(51.9%)	**3.35(2.12, 5.23) ***	**2.27 (1.30, 3.94) * ***
	Poor knowledge	51(21.7%)	184(78.3%)	1	1
Washing facility at latrine	Yes	87(61.7%)	54(38.3%)	**11.11(6.63, 18.63) ***	
	No	29(12.7%)	200(87.3%)	1	
Access of clean water	Access of clean water	91(34.3%)	174(65.7%)	**1.67(0.99, 2.80) ***	
	No access of clean water	25(23.8%)	80(76.2%)	1	
Husband support	Yes	59(44.4%)	74(55.6%)	**2.52(1.60, 3.96) ***	**1.16(1.11, 2.70) * ***
	No	57(24.1%)	180(75.9%)	1	1
Sanitation of environment	Adequate	21(60%)	14(40%)	**3.79(1.85, 7.76) ***	
	Poor	95(28.4%)	240(71.6%)	1	
Stress level of mother	No stress	25(59.5%)	17(40.5%)	**3.15(1.30,7.63) ***	
	Low stress	43(57.3%)	32(42.7%)	**2.88(1.32, 6.29) ***	
	Moderate Stress	24(20%)	96(80%)	0.54(0.25,1.16)	
	High stress	10(11.2%)	79(88.8%)	0.27(0.11, 0.67)	
	Very high stress	14(31.8%)	30(68.2%)	1	

Note: 1-reference category, * - p-value less than 0.25, ** - p-value less than 0.05

Discussion

This facility-based cross-sectional study attempted to assess the practice of genital hygiene care and factors associated with genital hygiene practice among postnatal mothers at public hospitals in the west Shoa Zone, central Ethiopia. The results of this study showed that one-third (31.4%, 95% CI: 26.51, 35.90) of the participants had good genital hygiene practice. This result is in line with the study done in Uganda, which found that 36% of the respondents had good genital hygiene practice [2]. This may be due to the similarity in sociodemographic characteristics and sociocultural beliefs of the study participants as the majority of the study participants in both studies attended education only up to primary school.

However, it is lower when compared with the study conducted in Indonesia which found out 68.5% and in Turkey which found out 52.8% of respondents have good practice of genital hygiene [8,21]. The discrepancy is may be due to socio-demographic and socioeconomic differences of participants of this study and participants of Indonesia and Turkey. Furthermore, the lower rate of genital hygiene practice in this study can be due to participants' unfavorable perception regarding genital hygiene. According to this study, 56.7% of the participants think it is taboo to discuss genital hygiene. Consequently, women might struggle to discuss genital hygiene and obtain essential information, potentially leading to insufficient knowledge and suboptimal hygiene practices.

According to this study, postnatal mothers who were living in urban area had 1.71 times more the chance of having good genital hygiene practice than those who were living in rural area. This finding is inline with the study done on genital hygiene at Policlinic in Turkey which showed that the practice of genital hygiene is high among participants who live in city than those who live in rural area [10]. This similarity is probabily due to the availability of information and material is higher in urban area than rural area.

Similarly the education of mother was among the factors which have positive relationship with the practice of genital hygiene. Postnatal mothers who attended secondary school (AOR 2.61, 95% CI 1.15, 6.42) and college diploma and above (AOR 2.96, 95% CI 1.22, 7.20) had higher chance of having good genital hygiene practice as compared with those who did not attended formal education. This finding is inline with the finding of the study done in the Niger Delta [1].

Additionaly this study revealed that postnatal mothers who earn greater than/equal to 5066 ETB average monthly income were more likely to have good genital hygiene practice (AOR 2.25, 95%CI 1.23, 4.12) as compared to postnatal mothers who earn less than 3457 ETB average monthly income. This finding is inline with study done in Cameroon [19]. This similarity could be due to the fact that postnatal mothers who earn low monthly income wouldnot be able to buy proper hygiene material like disposable or reusable sanitary pads and washing material.

This study revealed also postnatal mothers who got information of genital hygiene had higher chance of having good genital hygiene practice (AOR 2.46, 95%CI 1.82, 3.59) when compared

to those who did not heard information of genital hygiene care. This finding is supported by the study done in Nepal [20].

According to this study good genital hygiene practice was higher among postnatal mothers who had good knowledge of genital hygiene care (AOR 2.27, 95% CI 1.30, 3.94) which was more than two-fold as compared to those who had poor knowledge. This result is supported by studies in Turkey [13] and India [6] wich indicated that mother's good knowledge of genital hygiene has statistically significant positive association with good genital hygiene practice.

Finally, the study finding indicated that postnatal mothers those who were supported by their husband on genital hygiene had more probability of having good practice of genital hygiene (AOR 1.16, 95% CI 1.11, 2.70) than those who did not supported by their husbands. This finding is inline with study done in Indonesia which found husband support increase the chance of having good genital hygiene practice (AOR 2.88) [21]. Across socioeconomic

However, as seen by the CI getting closer to 1, the relationship between huspand support and good genital hygiene in this study is weak. This suggests that access to information, education, and income are more significant predictors of good genital hygiene than husband support. Furthermore, the predictive ability of husband support may vary among socioeconomic groups, pointing to potential interaction effects among independent factors (such as education x income) that were not examined in this study's analysis and suggesting future research.

Conclusions

The majority of postpartum women in this study exhibited inadequate genital hygiene practices, highlighting a critical gap in maternal postnatal care. Key determinants of optimal hygiene practices include urban residency, higher maternal education, higher monthly income, active spousal support, adequate knowledge, and access to health information.To improve postpartum genital hygiene and minimize related health risks, targeted interventions are urgently required. Healthcare facilities should integrate comprehensive genital hygiene education into routine antenatal and postnatal counseling, ensuring information is accessible to women with lower literacy levels and those residing in rural areas. Public health campaigns should leverage community media to widen information exposure. Furthermore, maternal health programs should actively engage partners, promoting spousal support as a vital component of postpartum recovery. Finally, addressing socioeconomic disparities through equitable health education and community-based support systems remains essential to bridging the gap for vulnerable, lower-income, and rural postpartum women.

Limitation of the study

Although this study provides valuable insights into a neglected dimension of maternal health in Ethiopia, several limitations must be acknowledged. First, the study was conducted exclusively

among postnatal mothers attending public hospitals, excluding those seeking care at community-based centers or private clinics. Consequently, the findings cannot be generalized to all postpartum women, particularly the substantial demographic that delivers at home. Second, because genital hygiene is a highly personal and sensitive topic, the data may be subject to social desirability bias, potentially leading to an overreporting of good hygiene practices. Finally, as the study relied on self-reported behaviors over the postpartum period, the findings may be susceptible to recall bias. Future community-based, longitudinal studies utilizing direct or alternative verification methods are warranted to address these limitations.**Author Contributions**

The main author, Mr. Tediyos Wakjira was conceptualized the study, designed the methodology, conducted the primary research, performed the data analysis, and drafted the initial manuscript. Mr. Tediyos Wakjira also coordinated the contributions of the co-authors and oversaw the entire project from inception to completion. Co-author Dr. Elias Teferi significantly contributed to the study design and provided critical insights during the data analysis phase. Dr. Elias Teferi also contributed in the manuscript writing through critical revisions. Co-author Dr. Eden Girmaye contributed significantly to the literature review and to the study design. Co-author Dr. Tekle Wakjira was reviewed and edited the final version of the manuscript, contributing to the overall coherence and clarity of the work. All authors have read and approved the final manuscript.

A conflict of interest

The authors declare no conflicts of interest related to this work.

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Data Sharing Statement

The dataset supporting the findings of this study is available from the corresponding author upon reasonable request.

Transparency Statement

The corresponding author, Elias Teferi, affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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References:

1. Akani CI. Perineal Hygiene in the Puerperium: the Niger Delta Experience. Trop J Obs Gynaecol. 2019;26(2)(October 2019):5178.
2. Rittah KC. Hygiene Practices of Postpartum Mothers in a Rural Ugandan setting.

International Health Sciences University; 2015.
3. Hamed AG. The Impact of Genital Hygiene Practices on the Occurrence of Vaginal Infection and the Development of a Nursing Fact Sheet as Prevention Massage for Vulnrable Women. 2015;4(6):55–64.
4. Lapinsky SE. Obstetric Infections. Critical Care Clinics [Internet]. 2013 Mar;29(3):509–20. Available from: http://dx.doi.org/10.1016/j.ccc.2013.03.006
5. Demisse GA, Dessau Sifer S, Kedir B, Fekene DB, Bulto GA. Determinants of puerperal sepsis among post partum women at public hospitals in west showa zone. BMC Pregnancy Childbirth. 2019;
6. Missiriya S. Knowledge and Practice of Postnatal Mothers Regarding Personal Hygiene and Newborn Care [Internet]. Vol. 40, Int. J. Pharm. Sci. Rev. Res. Article No; 2016. Available from: www.globalresearchonline.net
7. Abebaw N. Assessmentof the Prevalence and Associated Factors of Puerparal Sepsis Among Pnc Women During Post -Partum Period At Dessie Referal Hospital. ADDIS ABABA UNIVERSITY; 2018.
8. Adıbelli D, Kılınç NÖ, Akpak YK, Kılıç D. Genital hygiene behaviors and associated factors in women living in rural areas of Turkey. El Mednifico J. 2015;2(3):210.
9. Badran YA, El-Kashef TA, Abdelaziz AS, Ali MA. Impact of genital hygiene and sexual activity on urinary tract infection during pregnancy. Vol. 7, Urology Annals. Wolters Kluwer Medknow Publications; 2015. p. 478–81.
10. Hilal Karadeniz , Ruşen Öztürk GE. The Analysis of Genital Hygiene Behaviors of Women Who Applied to Women's Illnesses and Birth Policlinic. Erciyes Med J. 2019;41(4):402–8.
11. Kartal YA, Engin B, Teke B. Genital hygiene behaviors of midwifery students and Genital Hygiene Behavior Inventory (GHBI). Int J Caring Sci [Internet]. 2020;13(3):2029–35. Available from: https://www.proquest.com/scholarly-journals/genital-hygiene-behaviors-midwifery-students/docview/2480364118/se-2?accountid=188916
12. Chen Y, Bruning E, Rubino J, Eder SE. Role of female intimate hygiene in vulvovaginal health: Global hygiene practices and product usage. Women's Heal. 2017;13(3):58–67.
13. Sunay D, Kaya E, Ergun Y. Vaginal douching behavior of women and relationship among vaginal douching and vaginal discharge and demographic factors. J Turkish Soc Obstet Gynecol. 2011;8(4):264–71.
14. Kevser O. An Evaluation of the Relationship between Genital Hygiene Practices, Genital Infection. Gynecol Obstet. 2013;03(06).
15. Martial P, Pete N, Biguioh RM, Bita Izacar AG, Ben S, Adogaye B, et al. Genital hygiene behaviors and practices: A cross-sectional descriptive study among antenatal care attendees. J Public Health Africa [Internet]. 2019;10:746. Available from: http://obgyndo.com/resources/Rotating
16. YAŞAR BN, TERZİOĞLU F, KOÇ G. Knowledge and Practices of Genital Hygiene: Visual-Disabled Women Sample. E-Journal Dokuz Eylul Univ Nurs Fac [Internet].

2017;10(3):123–30. Available from: https://dergipark.org.tr/en/pub/deuhfed/586730%0Ahttps://dergipark.org.tr/en/
17. Ethiopian Public Health Institute (EPHI), ICF. Ethiopia Mini Demographic and Health Survey 2019: Final Report [Internet]. 2021. 1–207 p. Available from: https://dhsprogram.com/pubs/pdf/FR363/FR363.pdf
18. Ruiz C, Giraldo PC, Sanches JM, Reis V, Beghini J, Laguna C, et al. Daily genital cares of female gynecologists: A descriptive study. Rev Assoc Med Bras. 2019;65(2):171–6.
19. Nkamedjie Pete PM, Mabvouna Biguioh R, Bita Izacar AG, Béchir Adogaye S Ben, Nguemo C. Genital hygiene behaviors and practices: A cross-sectional descriptive study among antenatal care attendees. J Public Health Africa. 2019;10(1).
20. Shah SK, Shrestha S, Maharjan PL, Karki K. Knowledge and Practice of Genital Health and Hygiene among Adolescent Girls of Lalitpur Metropolitan City , Nepal. 2019;7(4):151–6.
21. Umami A, Sudalhar S, Lufianti A, Paulik E, Molnár R. Factors associated with genital hygiene behaviors in in surakarta, indonesia. Nurse Media J Nurs. 2021;11(1):94–103.
22. Kumar Shah S, Maharjan P, Karki K, Subedi S, Shrestha S, Laxmi Maharjan P, et al. Knowledge and Practice of Genital Health and Hygiene among Adolescent Girls of Lalitpur Metropolitan City, Nepal. Am J Public Heal Res [Internet]. 2019;7(4):151–6. Available from: http://pubs.sciepub.com/ajphr/7/4/4
23. Nalule Y, Buxton H, Flynn E, Oluyinka O, Sara S, Cumming O, et al. Hygiene along the continuum of care in the early post-natal period: An observational study in Nigeria. BMC Pregnancy Childbirth. 2020 Oct 6;20(1).
24. FMOH. Federal Democratic Republic of Ethiopia Ministry of Health Health Sector Development Program IV October 2010 Contents. 2014;(October 2010).
25. Gadade MM. A Study to Assess the Knowledge Regarding Perineal Care among the Post Natal Mothers in Selected Hospitals of Pune City. J Med Sci Clin Res. 2018;6(1):32517–22.