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Research Article

Effect of Attending Pregnant Mothers Conference on Birth Preparedness and Complication Readiness Practice among Recently Delivered Women in Rural Libo Kemkem District, North West, Ethiopia: A Community-Based Comparative Cross-Sectional Study

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Background. Birth preparedness and complication readiness strategies aimed to promote the timely utilization of skilled maternal health care. Pregnant mother conference is viewed as one of the needed interventions to reduce delays, by promoting obstetric danger sign awareness, family support, and decision-making power on a choice of place of delivery and the use of maternal health service. *Objective*. To compare the effect of attending a pregnant mother conference on birth preparedness and complication readiness practice among recently delivered women. *Method*. A community-based comparative cross-sectional study was conducted from February 15 to March 26, 2017, among mothers who gave birth in the past 12 months. Multistage simple random sampling method was implemented and 896 participants were contacted through a face-to-face interview. Descriptive, binary, and multiple logistic regression analysis was done. *Results*. Well-preparedness for birth and its complication among women who attended and did not attend the pregnant mother conference were 38.9% and 25.7%, respectively. Among the mothers who did not attend the conference, those who had four or more antenatal care visits (AOR=6.8, 95%CI 1.6, 29.8) and knew two or more danger signs of pregnancy (AOR=4.7, 95%CI:1.4, 15.6) were more likely being well-prepared for birth and its complication readiness, whereas among mothers who attended the conference, those who knew two or more danger signs of pregnancy (AOR=2.1, 95%CI:1.1, 4.3), those who had discussion with partners/families about place of delivery (AOR=11.4, 95%CI:3.1, 42.2), those who had previous delivery at health facility (AOR=2.4, 95%CI:1.2, 4.8), women who lived within one-hour walk to the nearest health facility (AOR=3.6, 95%CI:1.9, 6.9), and age of women within 19-34 years (AOR=6.8, 95%CI:1.7, 26.6) were significantly associated with birth preparedness and its complication readiness. *Conclusion*. Birth preparedness and complication readiness practice were higher among pregnant mother conference attendant women as compared to nonattendants. The health facility has to ensure encouraging women to participate in pregnant mother conference, promoting the utilization of antenatal care service, and counselling on obstetric danger sign. Moreover, the concerned bodies should promote interventions targeting the predisposing and reinforcing behavioral factors affecting the practice of birth preparedness and its complication readiness.

1. Introduction

Globally, maternal mortality (MM) is still become major public health concern. The problem is very high especially in developing region [1]. According to WHO systematic analysis, approximately 830 women die every day due to the complications of pregnancy and childbirth, of which sub-Saharan Africa alone accounts almost two-thirds (66%) of global maternal death. Globally of all death, the major causes of maternal deaths are hemorrhage (27.1%), hypertension during pregnancy (14%), sepsis, or infections (10.7%) [2]. In Ethiopia, the major causes of maternal death are obstructed labor/uterine rupture (36%), hemorrhage (22%), a hypertensive disorder of pregnancy (19%), and sepsis/infection (13%) [3]. However, most of the causes of maternal deaths are preventable and manageable by skilled health care, of which skilled attendant to assist childbirth is the single most critical intervention to reduce maternal mortality [2]. In developing region, the birth assisted by skilled personnel still remains low [4].

Birth preparedness and complication readiness (BPCR) is a key strategy to promote the timely use of skilled maternal and neonatal care, especially during childbirth. The key elements include recognition of danger signs, plan for a skilled birth attendant, plan for the place of delivery, saving money for transportation or other costs, identification of a potential blood donor, and assistant during labor. It has been globally endorsed as an essential component of safe motherhood programs to reduce delays for care [5–7]. Insufficient preparation for birth and its complication contributes to delay in receiving skilled obstetric services [5, 8]. Developing countries have recently worked on behavior change and community mobilization interventions to increase institutional skilled care following the concept of "BPCR." The interventions showed improvement in BPCR practice and institutionally delivery [9–15].

Ethiopia had developed National Reproductive Health Strategy, focusing on empowering women, men, family, and communities to understand pregnancy risks and complications. Federal Ministry of Health (FMOH) uses health extension workers, health development army at a community level, to improve maternal health service. Currently, FMOH has established community-based intervention "pregnant mother conference" (PMC) to enhance BPCR practice and institutional skilled maternal health service utilization [16]. PMC is a meeting of mothers' during pregnancy to receive education about pregnancy and pregnancy related issue (obstetric danger sign, ANC, BPCR, institutional skilled birth, and PNC) by nurses/midwives monthly and also they share experience and make a solution to use maternal service. PMC is viewed as one of the needed interventions to reduce delays, by promoting obstetric danger sign awareness, family support, and decision-making power on a choice of place of delivery and the use of maternal health service. Some studies were found in Ethiopia on BPCR. However, to the authors' knowledge the strategy of PMC on the effect of enhancing BPCR practice is little studied in Ethiopia. The objective of this study was to compare the effect of attending pregnant mother conference on birth preparedness and complication readiness practice among recently delivered women in rural Libo Kemkem District North West Ethiopia.

2. Methods

2.1. Study Period and Area. The study was conducted from February 15 to March 26, 2017, in rural Libo KemKem district, South Gondar zone in the northern part of Ethiopia. Libo KemKem district is found 645 kilometers away from Addis Ababa, the capital city of Ethiopia, and 81 km from Bahir Dar, the capital city of Amhara region. The district has 29 rural and 5 urban Kebeles, the smallest administrative unit, with a total population of 261,170 according to the population projection made from the 2007 Ethiopian population and housing census, of which the rural population accounts 223,378[17].

2.1.1. Study Design. A community-based comparative cross-sectional study design was carried out among women who gave birth within the last 12 months.

2.1.2. Sampling Size and Sampling Technique. The minimum sample size for each group was determined using the formula for two sample comparison by considering BPCR plan community meeting as a factor [18]. The final sample for each group was 448 by considering the following assumption; OR=4.36, power=80, 95%CI, the proportion of outcome among unexposed/nonattendants/=5%, the ratio of unexposed to exposed =1, designing effect=2, and 5% of the nonresponses rate.

In this study, a multistage simple random sampling technique was employed to recruit women who gave birth in the last 12 months. From the total of 29 rural Kebeles in the zone, the first seven Kebeles were selected by lottery method. Then the participants were grouped into pregnant mother conference attendant and nonattendant by reviewing their families matrix book found from each selected Keeble's health post. The socioeconomic and demographic characteristics of the women from the two groups were similar except for their attendance status on pregnant mother conference. Simple random sampling method was used for each group to select the study participants after proportional allocation for each Kebele.

2.1.3. Data Collection. Data were collected through face-to-face interview using a pretested structured questionnaire which was adapted from the monitoring birth preparedness and complication readiness tools and the indicators for maternal and newborn health Program of JHPIEGO [5] and then translated into the Amharic Language. Three diploma female midwives nurse participated to collect the data, and one Bsc nurse and the principal investigator supervised the data collection.

2.1.4. Data Processing and Analysis. The data were entered and checked by Epi Info V7 and exported to SPSS Version

23 for analysis. Frequency and proportion were used for the description of the study subjects in relation to sociodemographic, obstetric, and birth preparedness variables.

The dependent variable birth preparedness was dichotomized into well-prepared and not prepared for each group. Before doing independent logistic regression analysis on PMC attendants and PMC nonattendants, a significant difference between two independent groups was done by using the following formula: proportion mean difference=$(P1 - P2 \pm Za/2 = \sqrt{(p1(1 - p1)/n1) + (P21 - p2)/n2)}$ and OR=P1q2 /P2q1. And also, chi square test was done to see if any significant difference on the prevalence of birth preparedness and complication readiness practice among mothers who attended and did not attend pregnant mother conference. Both bi-variable and multivariable logistic regression analysis was used to identify the associated factors of birth preparedness and complication readiness practice. Variables having P-value ≤ 0.20 in the bivariable analysis were retained in the multivariable analysis to control the effect of confounders. The Hosmer-Lemeshow goodness-of-fit statistic was used to assess the fitness of the model. Odds ratios (OR) with 95% confidence intervals (95% CI) were calculated to measure the strength of the association. P values < 0.05 were considered as statistically significant.

2.2. Operational Definition

2.2.1. Well-Preparedness. A mother was considered as "well-prepared" if she made at least three from the four key items of BPCR during her last pregnancy (identified skilled provider, saved money, identified plan for the place of delivery, identified the mode of transportation) before the onset of labor [19].

2.2.2. Knowledgeable on Danger Sign during Pregnancy. A mother was considered to be knowledgeable on danger sign during pregnancy if she spontaneously mentions two or more of the three key danger signs (severe vaginal bleeding, swollen hands/face, and blurred vision).

2.2.3. Knowledgeable on Danger Sign during Labor. A mother was considered to be knowledgeable on danger sign during labor if she spontaneously mentions two or more of the four key danger signs (severe vaginal bleeding, prolonged labor (> 12 hours), convulsions, and being retained).

2.2.4. Knowledgeable on Danger Sign during Labor. A mother was considered to be knowledgeable on danger sign of postpartum if she spontaneously mentions two or more of the three key danger signs (severe vaginal bleeding, foul smelling vaginal discharge, and high fever).

2.3. Ethical Consideration. Ethical clearance was obtained from the IRB of the College of Medicine and Health Sciences, Bahir Dar University. Permission letter was taken from Amhara Regional Health Bureau, South Gondar Zonal Health Office, and Libo Kemkem Health Offices. Verbal informed consent was obtained from each study participant and the purpose of the study was explained for the study participants before conducting the interview.

3. Results

3.1. Sociodemographic Characteristics of the Respondents. Four hundred and forty-eight questionnaires were distributed for each PMC attendant and nonattendant mother, and the response rate was 97.3% and 97.1%, respectively. The mean ages of PMC nonattendants and PMC attendants were almost similar (30.9 ± 5.5 years and 31.6 ± 5.1 years, respectively).

The majority (93.1%) of the respondents' religion was Orthodox and the rest were Muslim (6.9%). More than half (56.8%) of PMC attendant mothers lived within one-hour walk distance from the nearest health facility whereas 55% of PMC nonattendant mothers lived more than one-hour walk distance from the nearest health facility. Regarding the respondents' educational status, 89.6% of PMC attendant and 86.9% of PMC nonattendant mothers were unable read and write (see Table 1).

3.2. Obstetric Characteristics of Respondents. Four hundred and one (92.2%) of PMC attendants and 340 (78%) of PMC nonattendant women had at least one ANC follow-up during their last pregnancy. Only 236 (54.3%) of PMC attendant and 174 (39.9%) of PMC nonattendant mothers had their most recent delivery at a health facility. Other Obstetric characteristics details are shown in Table 2.

3.3. Knowledge of Respondents on Key Obstetric Danger Signs. Almost all (99.8%) of PMC attendants and 95.4% of PMC nonattendants had knowledge on at least one key danger sign that can arise during pregnancy, childbirth, or postpartum periods. More than one-third (40.4%) of PMC nonattendants and 61.85% of PMC attendants mentioned severe vaginal bleeding as a danger sign during pregnancy (Table 3).

More than half (54.5%) of PMC attendant and above one-third (35.8%) of PMC nonattendant mothers had knowledge of at least two childbirth danger signs.

3.4. Birth and Its Complication Readiness Practice during Their Last Pregnancy. A higher proportion of respondents in the PMC attendants had prepared all aspects of preparation for childbirth and its complication than those among the PMC nonattendants. Almost three-fourths (73.3%) of PMC attendant and more than half (54.4%) of PMC nonattendant mothers reported that they identified place of delivery for their childbirth.

The majority (88.3%) of PMC attendant and almost two-thirds (65.6%) of PMC nonattendant mothers reported they prepared at least one essential item for clean and safe delivery for birth preparation.

One hundred and sixty-nine (38.9%) of PMC attendants (p=38.9% 95%CI: 34.3, 43.4) and 112 (25.7%) of PMC nonattendants (p= 25.7, 95%CI: 22, 30) were "well-prepared" for childbirth and its complication readiness on at least three

Table 1: Socio-demographic characteristics of the mothers in Libo Kemkem District, Amhara Region, North West Ethiopia 2017. (N=871).

Variable	Variable Categories	PMC non-attendants(n=436)	PMC attendant(n=435)	Total (N=871)
		n(%)	n (%)	N (%)
Age of woman (years)	19-24	62(14.2)	41(9.4)	103(11.8)
	25-34	252(35.8)	265(60.9)	517(59.4)
	>=35	122(28)	129(29.7)	251(28.8)
Maternal education	Unable to read and write	379(86.9)	401(92.2)	780(89.6)
	Can read and write	0(0.0)	2(0.5)	2(0.2)
	Grades 1-8	51(11.7)	32(7.4)	83(9.5)
	Secondary and above	6(1.4)	090.0)	6(0.7)
Occupation	Housewife	417(95.6)	430(98.9)	847(97.2)
	Farmer	11(2.5)	5(1.1)	16(1.8)
	Governmental employee	8(1.8)	0(0.0)	8(0.9)
Marital status	Divorce	9(2.1)	5(1.1)	14(1.6)
	Widowed	2(0.5)	1(0.2)	3
	Married	425(97.5)	429(98.6)	854(98.0)
Family size	1-4	113(25.9)	125(28.7)	238(27.3)
	>=5	323(74.1)	310(71.3)	633(72.7)
Husband's education	Unable to read and write	271(67.8)	263(61.3)	534(62.5)
	Can read and write	102(24.0)	118(27.5)	220(25.8)
	Grades 1-8	35(8.24)	40(9.3)	75(8.8)
	Secondary and above	17(4)	8(1.9)	25(2.9)
Husband occupation	Farmer	407(95.8)	419(95.6)	826(96.7)
	Government	18(4.24)	10(2.3)	28(3.3)

from the four key items of BPCR during their last pregnancy (identified skilled provider, saved money, identified plan for the place of delivery, and identified the mode of transportation) before the onset of labor.

3.5. Factors Associated with Birth Preparedness and Complication Readiness Practice. Initially, since the study was comparative, a chi-square test was done to see if there was any significant difference on the prevalence of birth preparedness and complication readiness practice among mothers who attended and did not attend pregnant mother conference and a statistically significant difference was observed between the two groups (X^2 = 17.263, df=1, P= <0.0001), indicating that the factors associated with BPCR could be different in the attendant and nonattendant mothers. The result also showed that there was a significant difference on the proportion of BPCR practice between PMC attendants and PMC nonattendants (the 95% CI difference was 13.2%±6.1) and OR =1.8 (OR=1.8, 95%CI: 1.4, 2.5). Therefore, the analysis was conducted separately.

On the bivariable analysis variables like age of the women, travel time to reach nearby health facility, number of parity, previous history of PNC, previous history of ANC, BPCR information during previous history of ANC follow-up, frequency of ANC visit, previous delivery at health facility, family size, discussion made with partner/families about the place of birth, and knowledge of the pregnant women of at least two danger signs of pregnancy, childbirth, and postpartum were significantly associated with well-preparedness for birth and its complication readiness at p–value <0.2 for PMC attendants, whereas among PMC nonattendants, in addition to the above listed PMC attendants' significant variables, husband counseled about BPCR practice during ANC follow-up and abortion history of the women were significantly associated with BPCR practice at p–value <0.2.

On the multivariable logistic regression analysis, variables such as four and above ANC visits and having knowledge of women for at least two pregnancy danger signs of pregnancy were found to be significantly associated with BPCR practice among PMC nonattendants whereas among PMC attendant's variables such as age of the women, travel time to reach nearby health facility, previous delivery at health facility, discussion made with partner/families about place of birth during last pregnancy, and having knowledge of the pregnant women of at least two danger signs of pregnancy and childbirth were significantly associated with BPCR practice after adjusting possible confounding factors at p<0.05.

PMC nonattendant women who had four and above ANC visits were almost seven times more likely well-prepared for birth and its complication than women who had less than four ANC visits (AOR=6.8, 95%CI 1.6, 29.8) (Table 4). PMC attendant women who lived within one-hour walk to the nearest health facility were 3.6 times more likely practice for BPCR than women who lived far away (AOR=3.6, 95% CI:

Table 2: Obstetric characteristics of the mothers in Libo Kemkem District, Amhara Region North West Ethiopia, 2017. (N=871).

Variables	PMC non-attendants (n_1=436) n (%)	PMC attendants (n_2=435) n (%)	Total (N=871) N (%)
Parity			
Null-Para	4(0.9)	1(0.2)	5(0.6)
1-2 births	86(19.7)	91(20.9)	177(20.3)
≥3 births	346(79.40	342(78.9)	688(79.0)
History of abortion			
Yes	19(4.4)	16(3.7)	35(4.0)
No	417 (95.6)	419 (96.3)	836(95.98)
History of stillbirth			
Yes	15(3.4)	6(1.4)	21(2.4)
No	421 (96.6)	429 (98.6)	850(97.6)
Previous ANC follow-up			
Yes	304(70.5)	375(86.4)	679(78.0)
No	132(29.5)	60 (13.6)	192 (22)
ANC follow-up during their last pregnancy (at least once)			
Yes	340(78.0)	401(92.2)	741(85.0)
No	96 (22)	34(7.8)	130(15)
Frequency of ANC visits (n_1= 340, $n_{2=}$401)			
1-3 times	296(87.1)	361(90.0)	657(88.7)
≥4 times	44(12.9)	40(10.0)	84(11.3)
Receive BPCR counseling during ANC visit (n_1= 340, $n_{2=}$401)			
Yes	285(83.8)	368(91.8)	653(88.1)
No	55(16.2)	33(7.2)	88(11.9)
Previous delivery at health facility (n_1= 432, $n_{2=}$434)			
Yes	171(39.6)	217(50.0)	388(44.8)
No	161(59.4)	217(50.0)	378(55.2)
Previous PNC follow-up (n_1= 432, $n_{2=}$434)			
Yes	157(36.4)	205(47.2)	362(41.8)
No	275(64.6)	229(52.8)	504(58.2)
Decision made in place of delivery for last birth			
Yes	399(91.50	430(98.9)	829(95.2)
No	37(8.5)	5(1.1)	42(4.8)
Decision maker on the place of delivery during last birth			
Self	149(37.3)	123(28.6)	272(32.8)
Husband	17(4.3)	23(5.3)	40(4.8)
Both (self+ husband)	233(58.4)	284(66.0)	517(62.4)

1.9, 6.9). The likelihood of PMC attendant mothers who had discussion with their partner/family about the place of birth was 11.4 times more likely well-prepared for birth and its complication than mothers who had not discussed the place of birth with her partner/family (AOR=11.4, 95%CI:3.1, 42.2) (Table 4).

4. Discussion

In this study, the proportion of BPCR among PMC attendants was 38.9% which was high compared to 25.7% of those PMC nonattendant mothers. This difference between the two groups could be explained due to the different level of danger signs awareness which might be the effect of PMC. This finding was supported by the study done in Nepal (54%=in the intervention groups, 33%=in the comparison groups) [13] and Tanzania (35.3% among mothers who received home-based life-saving skill education, 20.8% among their counterpart)[14]. Preparation for birth and its complication by each item, identification of health facility for delivery, identification of skilled provider, saved money, and arranged transportation for emergency were higher among PMC attendants compared to PMC nonattendants. This is in line with the study done in Siraha district, Nepal, rural Andhra, Pradesh, rural northern India, and Tanzania [12–14, 20].

The proportion for preparation for birth and its complication in both groups was lower compared to studies conducted in India (62.4%) and Tanzania (58.2%) [21, 22].

Table 3: Knowledge of obstetric key danger signs of the mothers in Libo Kemkem District, Amhara Region, North West Ethiopia, 2017.

Variables	PMC non-attendants (n_1=436)n (%)	PMC attendants (n_2=435) n (%)	Total (N=871)N (%)
Danger signs			
During pregnancy			
Severe vaginal bleeding	176(40.4)	269(61.8)	445(51.7)
swollen of hand and face	151(34.6)	214(49.2)	365(42.4)
blurred vision	92(21.1)	110(25.3)	202(23.5)
During childbirth			
sever vaginal bleeding	118(27.1)	182(41.8)	300(34.9)
Prolonged labor(>12hrs)	129(29.6)	174(40)	303(35.2)
convulsion	35(8)	68(15.6)	103(12.0)
retained placenta	287(67.4)	309(71.2)	596(69.3)
During postpartum			
Severe Vaginal bleeding	182(42.7)	267(61.5)	449(52.2)
Foul-smelling vaginal discharge	79(18.5)	166(38.2)	245(28.5)
High fever	11(2.6)	53912.2)	64(7.4)

The difference might be women in those studies had better educational status and ANC service. However, the proportion for birth preparedness in both groups was higher compared to the studies conducted in Ghana (16.5%), Arsi Zone (16.5%), and Southern Ethiopia (17%) [23–25]. This progress of birth preparedness might be because FMOH is working following the motto "no women should die while giving life." Due to this, the level of awareness about obstetric danger signs in this study was high.

The level of BPCR preparation among PMC attendant mothers had made an agreement with previous studies done in Uganda (35%) and Nepal (34.2%)[26, 27] and preparation for birth and its complication proportion among PMC nonattendants was consistent with previous studies done in Ethiopia, Tigray region (22.1%), Basoliben district (26.9%), Jima Zone (23.3%), and South Wollo (24.1%)[18, 19, 28, 29]. This similarity on the preparation made for the birth might be respondents' demographic characteristics.

Among PMC nonattendant mothers who had four and above ANC visits were 7 times more likely prepared for birth and its complication as compared to women who had less than four ANC visits. This finding is in line with other studies done in Rural Indian, Nepal, Tanzania, and Ethiopia, [18, 21, 22, 26]. This signifies that Antenatal care services visits could provide opportunities for health workers to inform pregnant women about the essential components of BPCR. However, four and above ANC follow-up was not associated with BPCR practice in PMC attendant mothers. This might be the presence of an additional source of information (PMC).

Among PMC nonattendant and PMC attendant mothers who knew two or more danger signs of pregnancy were 4.7 and 2 times more likely for BPCR practice, respectively, as compared to women who knew less than two danger signs of pregnancy. This finding agrees with the previous study conducted in Ethiopia [24, 28, 30, 31]. PMC attendant mothers who had knowledge of at least two danger signs of childbirth were 2 times more likely for BPCR practice. This finding was supported by the previous study conducted in Ethiopia [29]. And mothers who knew two or more danger signs of postpartum were 4 times more likely for BPCR practice when compared to women who knew less than two danger signs of postpartum. This finding is congruent with previous studies conducted in Ethiopia [24, 30, 31]. The reason for this might be mothers with knowledge of obstetric complications may fear something that could happen and need support from health personnel. However, knowledge on danger sign during childbirth and postpartum was not associated with BPCR practice for PMC nonattendant mothers. The difference could be explained as poor decision-making power and lack of money. PMC attendant mothers who had previous delivery at a health facility were 2 times more likely for BPCR practice than women had not. This finding was supported by the study done in Arsi Zone Ethiopia [24].

This could be explained due to the increase in mothers' confidence and trust in providers from previous use of the services. However previous delivery at a health facility was not associated with PBCR practice among PMC nonattendants. However, knowledge on danger signs during childbirth and postpartum was not associated with BPCR practice for PMC nonattendant mothers. The difference could be explained as poor decision-making power and lack of money. PMC attendant mothers who had previous delivery at a health facility were 2 times more likely for BPCR practice than women had not. This finding was supported by the study done Arsi Zone Ethiopia [24]. This could be explained due to the increase in mothers' confidence and trust in providers from previous use of the services. However previous delivery at a health facility was not associated with PBCR practice among PMC nonattendants.

The difference could be due to the different level of danger sign awareness and travel time to go to nearby health facility (55% of PMC nonattendants live far away about one-hour

Table 4: Factors associated with BPCR practice among PMC attendant and PMC non-attendant women who gave birth in the past 12 months in Lebo Kemkem District, South Gondar zone, Ethiopia, 2017.

Variables	Pregnant mother conference attendants				Pregnant mother conference non-attendants			
	BPCR practice		COR	AOR	BPCR practice		COR	AOR
	Yes	No			Yes	No		
Age								
19-24	33	8	55.0(19.7,153.7)	6.8(1.7,26.6)*	33	29	12.8(5.6,28.9)	3.1(0.2,51.1)
25-34	127	138	12.3(6.0,3.2)	2.8(1.1,7.0)*	69	183	4.2(2.1,8.5)	7.4(0.6,85.0)
>=35	9	120	1	1	10	112	1	1
Travel time to nearby health facility								
<=1 hour on foot	139	108	6.8(4.3,10.8)	3.6(1.9,6.9)*	89	107	7.6(5.0,12.5)	1.9(0.5,10.0)
>1 hour on foot	30	158	1	1	23	217	1	1
Previous delivery at HF								
No	27	190	1	1	15	246	1	1
Yes	142	75	13.3(8.2,21.8)	2.4(1.2,4.8)*	94	77	20.0(11.0,36.6)	0.9(0.1,8.9)
Discussed with partner/family about place of birth								
No	3	116	1	1	8	187	1	1
Yes	166	150	42.8(13.3,137.5)	11.4(3.1,42.2)*	104	137	17.8(8.4,37.7)	4.6(0.8,25.5)
Knowledge of at least two danger signs of pregnancy								
No	41	217	1	1	38	293	1	1
Yes	128	49	13.8(8.7,22.1)	2.1(1.1,4.3)*	74	31	18.4(10.7,31.5)	4.7(1.4,15.6)*
Knowledge of at least two danger signs of childbirth								
No	22	176	1	1	29	251	1	1
Yes	147	90	13.1(7.8,21.9)	2.2(1.1,4.4)*	83	73	9.8(6.0,16.2)	3.5(0.9,12.7)
Knowledge of at least two danger signs of postpartum								
No	62	246			59	317		
Yes	107	20	21.2(12.2,36.9)	3.8(1.8,8.0)	53	7	40.7(17.6,93.8)	1.1(0.1,8.3)
Frequency of ANC visit								
1-3 time/s	132	229	1	1	79	217	1	1
≥4 times	35	5	12.1(4.6,31.8)	2.0(0.6,7.0)	33	11	8.2(4.0,17.1)	6.8(1.5,29.8)*
Previous PNC follow-up								
No	32	197	1	1	18	257	1	1
Yes	137	68	12.4(7.7,19.9)	1.4(0.3,7.5)	91	66	19.7(11.1,34.9)	3.2(0.8,12.8)
Family size								
1-4	80	45	4.4(2.8,6.9)	0.6(0.2,1.9)	58	55	5.3(3.3,8.4)	0.3(0.1,1.1)
>=5	89	221	1	1	54	269	1	1

*p-value <0.05

walk from health facility). PMC attendant mothers, who lived within one-hour walk from the nearest health facility, were 3.6 times more likely for BPCR practice than women who lived far away from one-hour walk from the nearest health facility. This finding was in agreement with previous studies conducted in Guraghe and Bale Zone Ethiopia [30, 32]. However, traveling time to nearby health facility is not associated with PBCR practice for PMC nonattendants. This difference might be due to the fact that a large population of PMC attendants (57%) were living within one-hour walk from the nearest health facility compared to PMC nonattendants (45%).

PMC attendant mothers with the age groups 19-24 and 25-34 years were 6.8 and 2.8 times more likely for birth preparedness and complication readiness than women of age group >= 35 years, respectively. This finding was supported by the previous study done in Ethiopia; elderly women gave birth at home [33]. The reason might be aged women believed they are experienced with childbirth, young women are more educated than aged women, and other might be the acceptance rate of education was better in the young groups compared to their counterpart. However, the age groups 19-24 and 25-34 were not associated with PBCR practice among PMC nonattendants. The difference may be due to the difference in awareness level. PMC attendant mothers, who had discussed with their partners/families about the place of birth, were 11.4 times more likely for BPCR practice than women had not discussed. This finding has a similarity with the study done in India and Ethiopia [34, 35]. This might create a better opportunity to partners/ families to involve in arranging transportation and emergency fund saving and help the mother to decide a place of delivery. However, discussion with their partners/families about the place of birth is not associated with BPCR practice in PMC nonattendant mothers. This might be the discussion and decision-making power might be poor.

5. Conclusion

In this study, the proportion of birth and complication readiness practice was higher among PMC attendant mothers as compared to PMC nonattendant mothers. Well-preparedness for birth and its complication among PMC nonattendant mothers were significantly associated with four and above ANC visits and having knowledge of women for at least two pregnancy danger signs of pregnancy whereas, among PMC attendant mothers, age of the women, travel time to reach nearby health facility, previous delivery at health facility, discussion made with partner/families about place of birth during last pregnancy, and having knowledge of the pregnant women of at least two danger signs of pregnancy and childbirth were found to have an association with being well-prepared for birth and its complication practice. The health facility has to ensure encouraging women to participate in PMC, promoting the utilization of ANC service, and counselling on obstetric danger sign. Moreover, the concerned bodies should promote interventions targeting the predisposing and reinforcing behavioral factors affecting the practice of BPCR.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Authors' Contributions

Conceived and designed the study: Melash Belachew Asresie. Performed the study and the analysis: Melash Belachew Asresie, Dereje Berhanu Abitew, and Habtamu Wondiye Bekele. Wrote the paper: Melash Belachew Asresie, Dereje Berhanu Abitew, Habtamu Wondiye Bekele, and Tadesse Dagget Tesfaye. Manuscript preparation: Melash Belachew Asresie, Tadesse Dagget Tesfaye, and Habtamu Wondiye Bekele. All authors approved the final version for publication.

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