BIRTH PREPAREDNESS AND COMPLICATION READINESS PRACTICE AND ASSOCIATED FACTORS AMONG ANTENATAL CLIENTS IN ARBA MINCH HOSPITAL, SOUTHERN ETHIOPIA

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Abstract: **Birth preparedness and complication preparedness is a key component of globally accepted safe motherhood programs and its practice is used to reduce maternal mortality ratio, which helps ensure a post-2015 agenda of sustainable development goals. Therefore, the aim of the study was to assess birth preparedness and complication readiness among antenatal clients in Arba Minch Hospital.**

Methods: A hospital based cross sectional study was conducted from March to May 2018. Systematic sampling design was employed. The collected data were analyzed by SPSS for windows version 24.0. Descriptive, binary and multiple logistic regression analyses were conducted. Statistically significant tests were declared at a level of significance of P value < 0.05.

Results: Only 28.15% of the respondents were prepared for birth and its complications. And,

78(46.7%) and 82(47.1%) of the study subjects reported that they had identified a place for skilled delivery service and saved money for emergency respectively. Variables having statistically significant association with birth preparedness and complication readiness of women who had more than three history of still birth (AOR: 10.6; 95% CI: 2.8, 15.1), the presence of antenatal care follow up (AOR: 10.4; 95% CI: 1.93, 15.7), knowledge about key danger signs during pregnancy (AOR: 23.5; 95% CI: 6.14, 89.5), and husband's occupational status of governmental employee (AOR: 17.6; 95% CI: 1.67, 8.4).

Conclusions: Only a small number of respondents were prepared for birth and its complications. History of still birth, ANC follow up, knowledge of key danger signs during pregnancy, and husband's occupational status were independently predictors of birth preparedness and complication readiness.

Keywords: **Birth preparedness, Complication readiness, Antenatal care, Ethiopia.**

1. BACKGROUND

Globally, in 2015 an estimated about 349,000 pregnant women die in because of problems related to pregnancy and childbirth, however, the annual number of maternal deaths decreased by 44% from the 1990 report (1). Developing regions account for approximately 99% (302,000) of the global maternal deaths in 2015 only, with sub-Saharan Africa alone accounting for roughly 66% (201,000), followed by Southern Asia (66,000) (1). With this disparity, maternal mortality remains a public health challenge in developing countries.

The target of the fifth Millennium Development Goal (MDG5) calls for the reduction of Maternal Mortality Ratio (MMR) by 75% (three-fourths reduction) between 1990 and 2015 (2). However, only 44% decline had been achieved till 2015 globally (1). While almost all developed countries have achieved the desired MDG5 target (3), many of the developing countries are on track but difficult to measure for almost all developing countries. Majority of the resource-limited countries in sub-Saharan Africa have shown the slowest progress with an average annual rate of decline of 2.3% (1).

Ethiopia is also among the 189 countries committed to achieving the MDG5 target by reducing maternal mortality by three-quarter. However, the decline in the last 15 years was found to be non-significant with MMR of 676 per 100,000 live-births in the Ethiopian Demographic and Health Survey (EDHS) of 2011 as compared to 673 and 871 per 100,000 live-births in EDHS 2005 and EDHS 2000 respectively (4-6). In 2016, the EDHS reported an MMR of 412 per 100,000 live-births (7). As significance, improving maternal health status so as to attain the intended target is along with the top priority areas of the country.

However, to improve maternal health is by itself having different challenges; from this, lack of advance planning for use of a skilled birth attendant for normal births, and particularly inadequate preparation for rapid action in the event of obstetric complications are well-documented factors contributing to delay in receiving skilled obstetric care (8). Every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Pregnancy-related complications cannot be reliably predicted (9). Hence, it is necessary to employ strategies to overcome such problems as they arise.

Therefore; skilled care during and immediately after delivery and emergency obstetric care have been identified as key strategies and one of the indicators to track the MDG5 in reducing maternal mortality (10). The recent estimates show that the proportion of deliveries attended by the skilled attendant in many African countries remained below 50% (10). And also in Ethiopia, according to 2016 EDHS report, 80% of births to urban mothers were assisted by a skilled provider, as compared with 21% of births to rural, 28.6% in Southern Nation Nationality Peoples Region (SNNPR) (7).

Every pregnant woman is at risk for pregnancy complications which are unpredictable and can lead to morbidity or mortality of herself or her baby. The high maternal mortality and slow progress in low and middle-income countries, in part, are explained by the low coverage of maternal health care and the three delays (delays in deciding to seek care, delays in reaching care and delays in receiving care) to health care seeking behaviour of mothers. These delays have many causes; including logistic and financial concerns, unsupportive policies and gaps in services, as well as inadequate community and family awareness and knowledge about obstetric complication issues (11, 12). These problems are again influenced by demographic, poor socio-economic status and poor quality of services (11, 12). To address these problems, birth preparedness and complication readiness (BPCR) has been considered as a comprehensive strategy. The rudiments of BPCR at the individual level include: plan for a skilled birth attendant, plan for where to give birth, plan to save money, plan for transportation and identification of compatible blood donors in case of emergency (8).

Therefore, BPCR is the process of planning for normal birth and anticipating the actions needed in case of an emergency. It is a strategy to encourage women to be informed of the danger signs of obstetric complications and emergencies, choose a preferred birthplace and attendant at birth, make advance arrangement with the attendant at birth, arrange for transport to skilled care site in case of emergency, saving or arranging alternative funds for costs of skilled and emergency care, and finding a companion to be with the woman at birth or to accompany her to emergency care source. It promotes active preparation and decision making for delivery by pregnant women and their families (8).

Based on the study done in different part of the world pregnant women were not found to be well prepared for birth and its complication. For example, only 47.8% women who have already given birth in Indore city in India (13), 35% of pregnant women in Uganda (14) and 27.5% of pregnant women in Northern Nigeria were prepared for birth and its complication (15). Additionally, studies conducted in some parts of Ethiopia showed that in Oromia region, only 16.5% and 23.3% women who have already prepared for birth and its complication in Arsi and Jimma zone respectively (16, 17), and 24.1% pregnant women in Wolo and 37% pregnant women in Guraghe zone were prepared for birth and its complication respectively (18, 19).

Birth preparedness and complication readiness have been suggested by the World Health Organization (WHO) as a comprehensive approach for increasing coverage of skilled delivery care and reducing the three delays to care to seek during obstetric emergencies (20). Many countries in sub-Saharan Africa including Ethiopia have adopted this approach and included in the routine focused antenatal care and community level, however, its status among pregnant women has not been well studied (8, 20).

Generally, in 2015 the MDGs come to the end of their term, and a post-2015 agenda, comprising 17 Sustainable Development Goals (SDGs), takes their place. So, one of the global targets of SDGs is that the global MMR is reduced to <70 per 100,000 live births by 2030 (21).

Therefore, BPCR is essential for further improvement of maternal and child health, prevention of maternal deaths and being ready for complications reduce the three delays in obtaining these cares, however, little was known about the status of BPCR in rural Ethiopia in general and in Southern Region in particular. The existing evidence in Ethiopia shows that its status was low. Thus, it is timely and very crucial to have up-to-date information on the status of BPCR and affecting factors. Therefore, the aim of this study was to assess birth preparedness and complication readiness practice among antenatal clients in the study area.

2. METHODS

2.1 Study design and Study period

Institution based cross-sectional study was conducted from March to May 2018 to assess birth preparedness among pregnant women those are antenatal clients in Arba Minch Hospital, Gamo Goffa Zone, Southern Ethiopia.

2.2 Study area

Arba Minch General Hospital is found in Arba Minch Town and it is one of the Hospital in Gamo-Gofa Zone. The town is located at 505kms South of Addis Ababa and 275 km South West away from capital city of Southern Nation, Hawassa. According to the 2007 census result it has a population of 74,879 and of this 35,671 (47.64%) were females.

2.3 Source population and Study population:

Source of population: All pregnant women who came to attend antenatal care (ANC) service in the study area.

Study population: All pregnant women systematically selected who came to attend ANC service in the study area.

❖ **Inclusion criteria:** Pregnant women who attended first and above ANC visits were included.

❖ **Exclusion criteria:** Pregnant women who were severely ill and incapable of being interviewee and those who were not able to give the oral consents to participate in the study were excluded.

2.4 Sample size and Sampling procedures

The sample size was determined by using the following assumptions: where "n" is the required sample size, "Z" is a standard score corresponding to 95% confidence level 95% confidence level, 17% proportion (p) of birth preparedness among pregnant women in Southern Ethiopia (22), and a 5% margin of error (d):

$$n_i = \frac{(Z_{\frac{\alpha}{2}})^2 p(1-p)}{d^2}$$

Thus, the required sample was calculated to be:

$$n_i = \frac{(1.96)^2 0.17(1-0.17)}{(0.05)^2} = 217$$

There were 718 pregnant women registered on ANC service at Arba Minch Hospital. Thus, sampling from finite population of N=718:

$$n = \frac{n_i}{1 + \frac{n_i}{N}} = \frac{217}{1 + \frac{217}{718}} = 167$$

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With the above inputs the minimum sample required was 167. Taking 10% contingency the final sample size was 184 clients.

According to sampling procedure, systematic random sampling method was used to select the representatives from target population. The first pregnant women was assigned randomly among all antenatal client and then the remaining was selected by using systematic sampling technique in which every k^{th} (interval point) client was interviewed.

The individuals was selected by using the interval: J, J+k, J+2k, J+3k……J+ (n-1) k.

Where: total number of study population (N = 718); total number of sample size (n = 184); interval size (k): k= N/n = 718/184=3.9≈4; and the first participant or starting point (j): j value was selected between 1 and k, which was 2. The first participant was selected by using lottery method and then every 4th pregnant woman was taken among daily appointees depending on the order they come to the antenatal unit.

2.5 Variables of the study

2.5.1 Dependent

❖   Birth preparedness and complication readiness was the dependent variable; women were labeled as 'Yes =1' if 'planed' otherwise 'No = 0' 'no planed'.

2.5.2 Independent

➢ **Socio-economic and demographic factors**: Age, religion, ethnicity, educational status, occupational status, marital status, family size, and income;

➢ **Husband's factors**: Education and occupation;

➢ **Obstetric factors**: History of still birth, ANC visit, and gestational age;

➢ **Knowledge:** Knowledge of key danger signs during pregnancy.

2.6 Operational definitions

• **Birth preparedness and complication readiness practice**: a package of interventions composed of composite measure of 5 variables (planned to save money, planned to arrange transport, identified place of delivery, identified skilled attendant and identified blood donor). A woman was considered as 'prepared' for birth and its complication if she scored 3 or more 'Yes' otherwise 'not prepared'(17).

• **Knowledge of key danger signs during pregnancy:** spontaneous response to the three key danger signs: severe vaginal bleeding, swollen hands/face and blurred vision were asked. A woman was considered as 'knowledgeable' if she is responded 'Yes' to all the three danger signs (scored 3/3) otherwise 'not knowledgeable'(17).

2.7 Data collection procedures

Data were collected using pre-tested interviewer administered structured questionnaire. It was adapted according to local context and the objectives of the study from the safe motherhood questionnaire developed by Maternal and Neonatal Program of JHPIEGO, an affiliate of John Hopkins University (8). The intended information of the above mentioned variables were collected by using the adapted questionnaire. Three BSc graduate nurses, with previous experience in survey data collection, were recruited as data collectors and a supervisor was used.

2.8 Data quality control

The adapted questionnaire was pre-tested on 5% of the sample size (10 randomly selected pregnant women) in Arba Minch Health centre. Some modifications were made after the pre-test. The questions were translated to national language (Amharic) and back translated to English to maintain consistency. One day training was performed to data collectors and a supervisor by using training manual prepared for this purpose. Supervision was taken on a daily basis and meeting was performed with each member of the team to discuss performance and give out future work assignments. In addition, the investigators were monitored the overall quality of data collection.

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2.9 Data processing and analysis

Data were checked visually for completeness, coded, entered and analyzed using SPSS software version 24. The results were presented in the form of texts and tables. Descriptive statistics such as frequencies and proportion was used to describe the study population in relation to relevant variables. Binary logistic regressions model was used to determine the effects of explanatory variables on the outcome variable (BPCR). Variables were recruited for multivariable analysis based on findings from the bivariate analysis. To be a candidate for multiple logistic regressions; variables whose p-value < 0.25 along with the variables of known clinical importance were considered in the final model. Finally the overall goodness-of-fit of the model was assessed using the Hosmer and lemeshow's test. Adjusted Odds ratios (OR) and 95 % confidence intervals (CI) were computed for each independent variable to determine the strength of association with BPCR while controlling the effect of potential confounders, at a p-value ≤ 0.05 was used as a cut of point to declare statistical significance.

2.10 Ethical consideration

Ethical approval was obtained from the Institutional Review Board (IRB) of College of Natural Sciences of Arba Minch University. Necessary permission was secured from the administrator of Arba Minch General Hospital. Both verbal and written informed consent were obtained from each respondent before actual data collection. Issues of confidentiality were maintained by removing any identifiers from the questionnaire. To protect vulnerable group, data collectors were trained to maintain confidentiality and provide necessary health information based on the need of the participants, but not an intervention.

3.   RESULTS

Socio-demographic and economic characteristics:

Out of 184 pregnant women to be interviewed, 167 were interviewed making a response rate of 90.7%. Of the respondents 56(33.5%) were found between the age of 26-30 years. Only 9(5.4%) were currently not in marital union. The major predominant religions include Orthodox Christians 64(38.3%) and Protestant 50(29.9%). About 49.1% of respondents had attended primary education. Educationally about 70(41.9%) of respondents had attended secondary and above. Regarding occupational status majority 64(38.3%) of the respondent were housewives followed by government employees 46(27.5%). Nearly two third of the study participants 65(38.9%) and 46(27.5%) were Gamo and Gofa respectively. The monthly income of 88(52.7%) participants were between 1000-2000 Ethiopian Birr. Ninety seven (58.1%) had family size 3-5. Regarding husband's education, 67(42.4%) had secondary or post-secondary education. And on husband's occupation status, 59(37.7%) husbands were merchant (Table1).

Table 1: Socio-demographic and economic characteristics of pregnant women, Arba Minch Hospital, Southern Ethiopia, 2018.

Characteristics	Number	Percent
Age		
<20	19	11.4
21-25	28	16.8
26-30	56	33.5
31-35	46	27.5
>35	18	10.8
Marital status		
Currently in marital union	158	94.6
Currently not in marital union	9	5.4
Religion		
Orthodox	64	38.3
Protestant	50	29.9

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Catholic	34	20.4
Muslim	19	11.4
Educational level		
Illiterate	11	6.6
Read and write	33	19.8
Primary school	53	31.7
Secondary and above	70	41.9
Occupation		
House wife	64	38.3
Government employee	46	27.5
Private employee	27	16.2
Merchant	23	13.8
Others*	7	4.2
Ethnicity		
Gamo	65	38.9
Gofa	46	27.5
Wolayta	23	13.8
Amhara	29	17.4
Others**	4	2.4
Monthly income (Birr)		
<500	4	2.4
500-1000	35	21.0
1000-2000	88	52.7
>2000	40	24.0
Family size		
2	36	21.6
3-5	97	58.1
>5	34	20.4
Educational status of husband (n=158)		
Illiterate	19	12.0
Read and write	37	23.4
Primary school	35	22.4
Secondary and above	67	42.4
Occupational status of husband (158)		
Government employee	43	27.2
Private employee	33	20.9
Merchant	59	37.7
Farmer	23	14.2

(Others: occupations like student, and house maid; others**: Tigiray, Guraghe, and Silite)*

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Obstetric characteristics and knowledge of key danger sign during pregnancy

Seventy eight (46.7%) of women had less than four months of gestational age, and all of the participants had at least one a lifetime history of stillbirth. More than four times ANC visitors were 39 (23.4%) of pregnant women. Only 41(24.6%) study subjects were knowledgeable about key danger sign during pregnancy (Table 2).

Table 2: Obstetric characteristics and knowledge of key danger sign during pregnancy, Arba Minch Hospital, Southern Ethiopia, 2018.

Characteristics	Number	Percent
Gestational age		
3-4 months	78	46.7
5-7 months	52	31.2
>7 months	37	22.1
ANC visit		
≤2	68	40.7
3	60	35.9
≥4	39	23.4
History of still birth		
1	39	23.4
2-3	81	48.5
>3	47	28.1
Knowledge of key danger sign		
Yes	41	24.6
No	126	75.4

Birth preparedness and complication readiness practice:

The resultant BPCR index was used to examine the levels of BPACR practice among women based on the five arrangements which were suggested by the JHPIEGO BPCR monitoring tool and a study conducted in Southwest Ethiopia (8, 17). Accordingly among the arrangements made ahead of the last delivery, 78(46.7%) and 82(47.1%) of the study subjects reported that they had identified a place for skilled delivery service and saved money for emergency respectively. Only 8(4.8%) of respondents had arranged a blood donor for emergency. In summary, the aggregate result indicated 47(28.15%) of women arranged at least three out of five packages of interventions for BPCR and hence were found well prepared for birth and complication ahead of last childbirth (Table 3).

Table 3. Birth preparedness and complication readiness practice among pregnant women, Arba Minch Hospital, Southern Ethiopia, 2018.

Characteristics	Number	Percent
Package of interventions for BPCR		
Planned to save money	82	47.1
Planned to arrange transport	61	36.5
Identified place of delivery	78	46.7
Identified skilled provider	71	42.5
Identified blood donor	8	4.8
BPCR practice		
Yes (Well Prepared; ≥3 scored)	47	28.15
No (Not well Prepared; <3 scored)	120	71.85

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Factors associated with BPCR practice:

By applying binary logistic regression analyses; the husband's occupational status, gestational age, history of still birth and knowledge of key danger sign during pregnancy were the factors found to be significantly associated with BPCR practice. Furthermore, age of women, monthly income and number of family size were included in the final model because of those p-value were less than 0.25. The multiple logistic regression analysis showed that the odds of well-prepared were almost twenty three times higher among pregnant women who knew all of the three key danger signs during pregnancy (severe vaginal bleeding, swollen hands/face and blurred vision) compared to women who didn't know these danger signs (AOR: 23.5; CI: 6.14, 89.5). In addition, the significant predictors of being well-prepared were husband's occupational status with governmental employee (AOR: 17.6; CI: 1.67, 8.4), pregnant women who had ANC visit above four times (AOR: 10.4; CI: 1.93, 15.7) and women who had more than three history of still birth (AOR: 10.6; CI: 2.8, 15.1) (Table 4).

Table 4: Logistic regression model estimates of factors associated with BPCR practice among pregnant women, Arba Minch Hospital, Southern Ethiopia, 2018.

Characteristics	BPCR practice		Crude OR (95% CI)	Adjusted OR (95% CI)	P-value
	Yes (n, %)	No (n, %)			
Age					
<20	4(2.4)	15(9.0)	1	1	
21-25	8(4.8)	20(12.0)	1.5(0.38, 5.91)	1.9(0.14, 25.4)	
26-30	18(10.8)	38(22.0)	1.78(0.52, 6.1)	1.7(0.14, 20.5)	
31-35	9(5.4)	37(22.2)	0.91(0.24, 3.4)	0.6(0.05, 7.0)	
>35	8(4.8)	10(6.0)	3.0(0.71, 12.7)	1.9(0.13, 27.2)	
Husband occupational					
Government employee	25(15.8)	18(11.4)	**7 (1.9, 22.7)****	**17.6(1.67, 8.4)***	0.017
Private employee	8(5.1)	25(15.8)	1.5(0.41, 5.8)	11.4(0.86, 15.0)	
Merchant	8(5.1)	51(32.3)	0.75(0.2, 2.8)	3.9(0.41, 37.1)	
Farmer	4(2.5)	19(12.0)	1	1	
Monthly income (Birr)					
<500	2(1.2)	2(1.2)	1	1	
500-1000	8(4.8)	27(16.2)	0.29(0.04, 2.5)	0.09(0.01, 5.47)	
1000-2000	28(16.8)	60(35.9)	0.47(0.06, 3.5)	0.12(0.01, 7.49)	
>2000	9(5.4)	31(18.6)	0.29(0.04, 2.4)	0.03(0.01, 1.93)	
Family size					
2	8(4.8)	28(16.8)	0.46(0.16, 1.3)	0.61(0.07, 5.61)	
3-5	26(15.6)	71(42.5)	0.59(0.26, 1.4)	0.79(0.16, 3.99)	
>5	13(7.8)	21(12.6)	1	1	
ANC visit					
≤2	9(5.4)	59(35.5)	1	1	
3	15(9.0)	45(26.9)	2.2(0.88, 5.5)	3.16(0.69, 14.4)	
≥4	23(13.8)	16(9.6)	**9 (3.7, 24.3)****	**10.4(1.93, 15.7)***	0.006
History of still birth					
1	5(3.0)	34(20.4)	1	1	
2-3	14(8.4)	67(40.1)	1.4(0.47, 4.3)	1.18(0.17, 8.42)	
>3	28(16.8)	19(11.4)	**10(3.3, 30.3)****	**10.6(2.8, 15.1)***	0.003
Knowledge of key danger sign					
Yes	30(18.0)	11(6.6)	**17(7.4, 41.3)****	**23.5(6.14, 89.5)***	0.000
No	17(10.2)	109(65.3)	1	1	

(Both **Crude OR and *Adjusted OR are significant at p-value ≤ 0.05)

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4. DISCUSSION

The study was conducted to assess practice of birth preparedness and complication readiness among antenatal attendants and to identify its associated factors in Arba Minch Hospita. The prevalence of birth preparedness of 28.2% estimated in our study appears to be almost consistent with previous study which was conducted in Adama (29.1%) (23). Furthermore, the estimated of the study was higher than what was reported in different part of Ethiopia from Arsi 16.5% (16), Jimma 23.3% (17) and Wolo 24.1% (18) but lower than 37%, which was reported by a study conducted in Guraghe, southern Ethiopia (19). On the other hand the result was less than the finding of 35% in Uganda (14) and 47.8% in Indore city, India (13). It is difficult, however to compare the current study findings with those from other, studies conducted in Ethiopia and other countries, as the measures used to determine BPCR had some variations and the general environments differed somewhat. A study indicated that, the difference with findings, higher prevalence of BPCR might be observed because of women are aware of the key danger signs and what actions to be taken (19).

Nevertheless, the underlying principles regarding BPCR are the same and the methods used to study birth preparedness are similar. The most common birth preparedness practice observed in our study was saving money (47.1%), which may be explained by the fact that both women and their partners know that money is required to facilitate referral in case of complications. The percent of 46.7 and 42.5 women were identified place of delivery and planned to be attended by skilled attendants respectively, which were relatively better. However, 36.5% planned to arrange transport and only 4.8% planned to arrange blood donor which were still low. These low levels of preparations were also reported in other prior studies in the country. In the study conducted in Aleta Wondo South Ethiopia, only 7.7% and 2.3% of women were arranged transport and identified blood donor respectively (22). This may be explained by the low socio-economic status, low level of knowledge and low education among women as well as the general population. As BPCR is relatively a recent strategy, service providers and program planers might not have given special attention.

Among socio-demographic and economic related factors, only husband's occupational status was a significant factor. The study participants having partner who is government employed increased the likelihood of preparation for birth and its complication as compared to those whose partners were farmers. This finding was consistent with the study conducted in Adama town health facilities, Ethiopia (23). This might be because government employed husbands were the one with better educational status. Correspondingly, study conducted in Jimma, Southwest Ethiopia and rural Uganda revealed that spouse occupation status has positively association with a birth plan respectively (17, 24).

Pregnant women with more than three history of still birth were more likely to be prepared than those who have only one history of still birth. This could be the fact that those pregnant women could anticipate serious complications from their repeatedly previous experiences. Correspondingly, this finding was in agreement with study done at Adama and Wolo, these indicated that a woman who faced a lifetime history of stillbirth was more likely prepared for birth and its complication than women's who did not with adjusted OR of 2.74 and 5.8, respectively (23, 18).

In contrary to the practice of BPCR among study participants, 41(24.6%) of study participants were knowledgeable about key danger signs during pregnancy, and also it was significantly associated with BPCR. Women who were knowledgeable on key danger signs during pregnancy were increased the likelihood of preparation for birth and its complication compared to those who were not knowledgeable. The finding is consistent with the study, different part of Ethiopia, from Guraghe zone (19) and Goba woreda (25). A study supported by qualitative questionnaire revealed that, generally, people are aware of the key danger signs and what actions to take; and give the evidence of health extension workers and one-to-five networks of women are the major sources of information on BPCR (19). The reason for this might be mothers who are knowledgeable on key danger signs during pregnancy may have fear that the problem might happen to them which intern prompt them to seek support and advice from health care providers in general. This suggests that the structures of community mobilization and sensitization are crucial in promoting awareness on enhancement of women's health service utilization. Therefore, strengthening community level structures, especially in rural areas, may improve BPCR uptake, thereby improving maternal health as well as child health besides.

This study may have its own limitation because as with any cross-sectional study, the findings of the current study may not provide strong evidence on the direct cause-and-effect relationship between BPCR practice and explanatory variables. As the study focused on one district, the result may not be conclusive to the region at large.

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5. CONCLUSIONS

Birth preparedness and complications readiness practice of pregnant women in the study area was low. History of still birth, ANC care, knowledge of key danger signs during pregnancy and husband's occupational status were main factors associated with BPCR practice. As recommendation, giving special emphasis to knowledge of key danger signs and BPCR during health education and ANC counseling are suggested. Although building on the already established social mobilization and awareness creation structure at the community level, where health extension workers and the one-to-five networks are playing pivotal roles, especially, awareness creations on considerations of identifying blood donor during pregnancy and volunteer blood donation mainly for BPCR practice, it is critical to build their capacity on mobilization and awareness creation. That would help sustained uptake of BPCR.

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