ORIGINAL RESEARCH PAPER

Volume-7 | Issue-10 | October-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG WOMEN OF CHILD BEARING AGE IN SAMARA LOGIA TOWN, AFAR REGION, NORTH EAST ETHIOPIA - 2016

Public Health

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ABSTRACT

Background: Every day hundreds of women die during pregnancy and childbirth-related complications. Most of these deaths were in the developing regions, where the maternal mortality ratio is 14 times higher than in the developed regions. Birth preparedness and complication readiness plan theory is critical in reducing delays in obtaining care and can reduce maternal and newborn morbidities and mortalities.

Objective: To assess the prevalence of birth preparedness and complication readiness among reproductive age women in Semera Logia town - 2016.

Methods: Cross-sectional study design

Result: 76.5% had ever heard about birth preparedness and complication readiness. 43.5% were not prepared for birth and its complications. Birth prepared and complications readiness was higher among mothers with knowledge of danger signs during labor and partner accompany were significantly associated.

Conclusion: Majority of the women heard about birth preparedness and complication, but 50% were not well prepared for birth and its complication. Statistically significant association with birth preparedness and complication readiness of women were attending up to primary and secondary education, the presence of antenatal care follow up and partner accompany.

KEYWORDS

Birth Preparedness, Complications Readiness

INTRODUCTION

Background: In Ethiopia the maternal mortality ratio is 420 maternal deaths per 100, 000 live births. Despite 41% ante natal care attendance by health professionals, only 16% deliver under skilled assistance and in health facilities. Where as in Afar region 31% of women receive ANC from a skilled provider, 9.9% of the women deliver in health facility by skilled provider (1).

Birth Preparedness and Complication Readiness (BP/CR) is the process of planning for normal birth and anticipating the actions needed in case of an emergency. It can also be defined as a strategy to promote utilization of skilled maternal and neonatal care timely, based on the theory that preparing for childbirth and being ready for complications reduces delays in obtaining this care. There are numerous interrelated socio-cultural factors which delay care-seeking. Care-seeking is delayed because of the delay in identifying the complication, deciding to seek care, identifying and reaching a health facility, and receiving adequate and appropriate treatment at the health facility (2). Birth preparedness and complication readiness (BP&CR) is therefore one intervention that addresses these delays by encouraging pregnant women, their families, and communities to effectively plan for births and deal with emergencies, if they occur. In a skilled care approach, birth preparedness includes identifying a skilled provider and making the necessary plans to receive skilled care for all births (3).

Birth preparedness is one of the elements of focused ante-natal care. Birth preparedness and complication readiness is an approach that aims at raising awareness and creating a stronger demand for quality health services. Since pregnancy is perceived as an ordinary event, most families do not plan for a birth nor do they expect an emergency. When a pregnancy complication arises, the family is unprepared and while gathering funds, finding transportation and reaching the appropriate health facility, time is usually wasted and in many cases, it is too late. Thus it is imperative that all women and their families are equipped with adequate information about the danger signs of a pregnancy complication and what actions should be taken (4)

Statement of the problem: The birth of a baby is a major reason for celebration around the world. Societies expect women to bear Children, and honor women for their role as mothers. Yet in most of the world, pregnancy and childbirth is a perilous journey. World Health Organization estimated that 529,000 women die annually from maternal causes. The situation is most dire for women in Sub-Saharan Africa, where one of every 16 women dies of pregnancy related causes during her lifetime, compared with only 1 in 2,800 women in developed regions (2).

All pregnant woman should have a written plan for birth and for dealing with unexpected adverse events, such as complications or emergencies, that may occur during pregnancy, childbirth or the immediate postnatal period, and should discuss and review this plan with a skilled attendant at each antenatal assessment and at least one month prior to the expected date of birth (3).

Globally, more than half a million women still die annually as a result of complications of pregnancy and childbirth, in which 99% of these deaths occurring in the developing world. Besides this, for every 100,000 live births, 240 women died during pregnancy, childbirth, or the postpartum period in which are mostly from developed countries (5).

Ethiopia has one of the highest rates of maternal mortality in Africa (2).According to the Ethiopian Mini DHS survey 2014 report, the maternal mortality rate is estimated to be 420 deaths per 100,000 live births in 2013.Even though there is a significant decline due to Ethiopian government commitment through health extension program (HEP), Ethiopia is still far from the Millennium Development goal five target by 2015 that was 267 maternal deaths per 100, 000 live births (6).

Every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Hence, it is necessary to employ strategies to overcome such problems as they arise. Despite the great potential of Birth Preparedness and Complication Readiness in reducing the maternal and newborn deaths its status is not well known in most of sub-Saharan Africa (2, 7). Therefore, further study is required to assess knowledge & practice on birth preparedness and complication readiness to provide data on the issue that helps health workers and policy makers to implement and scale up safe mother hood program in an attempt to reduce the highest maternal and neonatal mortality rate of Ethiopia.

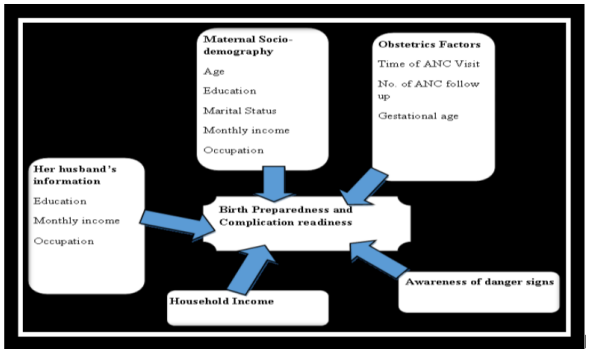

FIGURE 1: Conceptual frame work of dependent and independent variables for BP/CR, Semera Logia, May 2016. (Adapted from JAPIGO monitoring of BP/CR)

Significance of the study : It is difficult to predict which pregnancy, delivery or post delivery period will experience complications; hence birth preparedness and complication readiness plan is recommended with the notion of pregnancy is risk. Birth preparedness and complication readiness is a comprehensive strategy to improve the use of skilled providers at birth, the key intervention to decrease maternal mortality (2).

Some studies were found in Ethiopia on birth preparedness and complication readiness, but not large enough. No published information is available in Afar region in this issue. Therefore, this research was designed to assess the prevalence of BP& CR in this specific area. The finding of this study is useful to know the prevalence of BP/CR then to do an overall strategy for achieving good maternal and neonatal health care and to scale up safe motherhood programs. This study can also be used as a base line for further studies conducted in this area. Over all this research will be helpful to inform policy makers, particularly, the ministry of health to come up with new policies and strategies to improve maternal & neonatal health services, so that a significant attention will be given such regions.

General objective: To assess prevalence and associated factors of birth preparedness and complication readiness among reproductive age women in Samara Logia town - 2016.

Specific objectives: 1).To assess prevalence of birth preparedness and complication readiness among reproductive age women in Samara Logia town from May 18-25, 2016. 2).To describes associated factors with birth preparedness and complication readiness among reproductive age women in Samara Logia town from May 18-25, 2016.

METHODS

Study Area and Period: The study was conducted in Samara Logia town, of Afar region in May 2016. Samara is the capital city of Afar regional state located 580 km North- East of Addis Ababa. The town is found under Dubti district, and the district is bordered on the north by Kori, on the south by the Somali Region, on the east by Asayita, and on the west by Chifra.

Semera has a latitude and longitude of 11°47'32"N 41°0'31"E/ 11.79222°N 41.00861°E. At an average temperature of 32.3℃ June is the hottest month of the year, and the lowest occurs in January it is around 24.2℃.

The total population of Samara Logia town in 2016 is 29,726. From this, 6777 are reproductive age group women and out of this, women who had delivered in the last two years are 1375. There are 5,215 households. The town has one kebele(smallest administrative unit) and 13 villages. Five villages are found in Samara and eight villages are found in Logia.

The town has two health centers.

Study Design: Community based cross-sectional quantitative study.

Source Population: All reproductive age women in Samara Logia town.

Study Population: All reproductive age women who had delivered with in the last two years preceding the date of survey, in Semera Logia town.

Study unit: Reproductive age respondents who gave birth within the last two years in Samara Logia town.

Inclusion Criteria: All child bearing age women who gave birth during the last two years prior to the study in Samara Logia town.

Exclusion Criteria: Women who are not permanent residents of Samara Logia town in the period of reference and Women who were critically or mentally ill at the time of interview.

Sample Size Determination: The sample size is determined by using a single population proportion formula for cross sectional study formula below. Prevalence of Birth preparedness and complication readiness was 22% (2).

$$n=\frac{Z^2PQ}{D^2}$$

Where n = sample size
Z = level of confidence (95%=1.96)
P = 22%
Q = 78%
D- Sampling error = 4.5%
Using this calculation n=326+10% non-respondent rate =359
After using correction formula n = 285

Sampling Technique: To identify the study units, stratified sampling technique was employed. Based on the catchment areas of each 2 health centers in the town, the town was grouped in to two groups (strata) and then, the calculated sample size was proportionally allocated to Samara and Logia according to their reproductive age women who had delivered within the last two years, preceding the survey.

Data collection materials and procedures: Data was collected by using a structured interviewer administered questionnaire by four selected fourth year midwifery students. The tool is adapted from the survey tools developed by JHPIEGO Maternal and Neonatal Health Program (2).

Dependent variables: Birth preparedness and complication readiness

Independent variables: Maternal socio demographic characteristics, paternal socio demographic characteristics, Obstetric factors, Household income, Awareness of danger signs

Data Quality Measures: To maintain the validity of the measurement standard questionnaire of monitoring birth preparedness and complication readiness: tools and Indicators for maternal and newborn health was taken from JHPIEGO manual and contextually modified based on study interest. After data collection, questionnaires were reviewed and checked for completeness.

Data Analysis: The collected data were checked for its completeness and consistencies. Then, it was cleaned, coded and entered in to Epidata V.3.02 and exported to statistical package for social sciences (SPSS) for windows version 20. First, simple frequency distribution was calculated. Logistic regression analysis was also done to identify factors associated with Birth Preparedness and Complication Readiness.

Operational Definitions: This is based on the survey tools developed by JHPIEGO Maternal and Neonatal Health Program (2).

Birth preparedness- a women will be considered as birth prepared if she identified more than three component of preparedness list in the questioner

Knowledge on danger signs of pregnancy- a women will be considered knowledgeable if she can mention at least three danger signs for pregnancy.

Knowledge on danger signs of labor or child birth- a woman will be considered knowledgeable if she can mention at least three danger signs for labor/child birth.

Knowledge on danger signs of post-partum- a woman will be considered knowledgeable if she can answer 75% from knowledge part of question at this study.

Knowledge of birth preparedness and complication readiness: A woman was considered knowledgeable if she can spontaneously mentioned at least 4 item of knowledge of birth preparedness and complication readiness question.

RESULTS

Socio -demographic characteristics of the participants: Total sample was 285. Out of these 285(100%), 111(38.9%) were between in the age range of 20 and 24. Majority of the participants 264(92.6%) were married. 207 (72.6%) belongs to Muslim Religion. Almost half 134 (47%) of the were from Amhara ethnic group. Majority of participants 189(66.3) were house wives and 95 (32.4) had secondary educational status and above. The rest 114 (40) were primary and below excluding 76(26.7) which are not able to write and read.

97(34) got an average monthly income less than 1000.00 birr, 92 (32.3%) between 1000.00 - 3000.00 birr, 87(30.5%) greater than 30000 and 9 (3.2%) don't know there average monthly income. On the other hand around half 146(51.2%) participants' husband have primary education and below. (Table:1)

TABLE 1 Distribution of socio demographic and socio economic variables, Semera Logia town, May 2016

Variable	Frequency	Percent
Town		
Logia	251	88.1
Semera	34	11.9
Age in years		
15-19	6	2.1
20-24	111	38.9
25-29	106	37.2
30-34	42	14.7
35-39	12	4.2
40-44	8	2.8
45-49	0	0
Marital status		
Married	264	92.6
Divorced	14	4.9
Widowed	3	1.1
Separated	4	1.4
Religion		
Muslim	207	72.6
Orthodox	72	25.3
protestant	6	2.1
Total	285	100
Ethnicity		
Afar	104	36.5
Amhara	134	47
Tigre	32	11.2
Oromo	14	4.9
Others	1	0.4
Occupation		
Housewife	189	66.3
Gov't employee	23	8.1
Merchant	45	15.8
Private employee	6	2.1
Daily laborer	20	7
Others	2	0.7
Maternal educational status		
Not able to write &read	26.7	76
Able to write &read	13	37
Primary Education (1-8)	27	77
Secondary education (9-12)	18.9	54
College or university	14.4	41
Paternal educational status		
Not able to write and read	55	19.3
Able to write and read	52	18.2
Primary education (1-8)	39	13.7
Secondary education (9-12)	51	17.9
College or university	81	29.5
Don't know	4	1.4
Average monthly income		
<1000 birr	97	34
1000-3000 birr	92	32.3
>3000 birr	87	30.5
Don't know	9	3.2

Obstetric Characteristics of the Respondents: 268 (94) were found to receive ANC, from this majority of them 223(83.2%) found to receive ANC within 1 to 4 months and 166 (61.9%) of them had 2 - 3 times ANC follow up (Table: 2)

TABLE 2 : Obstetric characteristics of respondents in Semera Logia town, May 2016. Table 2: Obstetric characteristics of respondents in Samara Logia town, May 2016.

Childbirth Characteristics		
Total Number of Pregnancies		
1	59	20.7
2 to 4	172	60.4
5 and above	54	18.9
Total number of deliveries		
1	59	20.7
2-4	168	58.9
5 and above	39	13.7
Ever had Stillbirth		
Yes	32	10.2
No	253	88.8
Total	100	100
Number of SB experienced (n= 32)		
Only1	28	87.5
2 and above	4	12.5
Received ANC		
Yes	268	94
No	17	6
First ANC received (in months) n=268		
1-4	223	83.2
5-6	41	15.3
>=7	4	1.5
Number of ANC visits (n=268)		65.3
<3	175	34.7
>=4	93	4.5
Partner support during ANC		
Yes	162	56.8
No	123	43.2
Any serious health problems related to pregnancy		
Yes	94	33
No	191	67
Problems experienced related to pregnancy		
Vaginal bleeding	74	78.7
Sever fever	50	53.2
Absence or reduced fetal movement	33	35.2
Swollen face or hand	12	12.8
Headache / blurred vision	26	27.7
Seizure/convulsion	3	3.2
Leakage of fluid per vagina	6	6.4
Others	4	4.3

Health seeking behavior		
Yes	91	96.8
No	3	3.2
Final decision to seek assistance for any health problems made by		
Herself	9	9.6
Both	82	87.2
Her husband	3	3.2

Knowledge of danger signs during pregnancy: Two third of the participants 183 (64.2%) knew about serious health problem/s that can occur during pregnancy and that could endanger the life of pregnant women. The rest of the participants 102 (35.8) don't know those signs .Out of those who had awareness, majority of them 175 (95.6%) mentioned vaginal bleeding as danger sign of pregnancy. In addition 74 (40.4%) severe headache and blurred vision, 54 (29.5%) mentioned swollen hands and face as danger sign of pregnancy, 77(42.1%), and 102(55.7%) mentioned high fever and reduced fetal movement respectively.

Knowledge of Danger signs during labor/childbirth: Greater than half of them 159 (55.8%) respondents had awareness. Out of these 159 women, 152(95.6%) mentioned vaginal bleeding, 119(74.8%) have mentioned placenta not delivered 30 minutes after the newborn as danger sign. 56(35.2) expressed labor lasting more than 24 hours as danger sign and 38(23.9%) mentioned convulsion as danger sign.

Knowledge of danger signs during post-partum: 154 (54%) stated that they knew the information about danger signs during postpartum period. From those who had the knowledge, 149(96.8%) reported vaginal bleeding and 109 (70.8%) severe head ache as a danger sign. There were also 67 (43.5%) of the respondents who mentioned blurred vision as danger sign during post-partum period. Out of the 154 respondents, who knew about danger signs during post-partum period, 33 (21.4%) have reported convulsion as danger sign. (Table:3)

TABLE 3: Respondents knowledge about danger signs during pregnancy (n=183), labor (n=159) and post natal period (n=154), Semera Logia, May 2016.

Danger signs	Danger signs mentioned		
	during pregnancy	during Labor	Postpartum
Severe vaginal Bleeding	175(95.6%)	152(95.6%)	149(96.8)
Severe Headache	74(40.4)		109(70.8)
Blurred Vision	74(40.4)		67(43.5)
Convulsion	15(8.2%)	38(23.9)	33(21.4%)
Swollen Hands & Face	54(29.5%)		
Labor Lasting for > 24 Hrs		119(74.8)	
Retained Placenta		56(35.2)	
High Fever	77(42.1%)		32(20.8)
Malodorous vaginal discharge			15(9.7)

Knowledge about danger signs of new born Neonate: 164 (57.5%) stated that they knew any danger signs of new born neonate. Out of those respondents who knows about danger signs, 12 (7.3%) reported convulsion as danger sign & 23 (14%) have reported lethargy or loss of consciousness as danger sign. The respondents who mentioned difficulty/ fast breathing were 123 (75%). (Table: 4).

TABLE 4: Knowledge about danger signs of newborn, Semera Logia, 2016.

Variables	yes		No	
	Number	Percent	Number	Percent
Any danger signs	164	57.5	121	42.5
Difficult/fast breathing	123	75	41	25
Poor sucking	113	68.9	51	31.1
Pus/bleeding from the cord	96	56.5	68	43.5
Convulsion	12	7.3	152	92.7
Lethargy	23	14	141	86
Red/swollen eye with pus	9	5.5	155	94.5
Failure to suck	39	23.8	125	76.2

Source of information about Birth Preparedness: 207 (76.2%) stated that they heard the word birth preparedness and the rest of them did not know. Out of 207 respondents who heard about the word birth preparedness, 162 (77.9%) have reported as they heard from the health professional. These respondents who heard about birth preparedness from HEW were 84 (40.4%), from media as 83(39.9%). Those 45 (21.6%) got information from their family, friends or daguu (information form community). (figure:3)

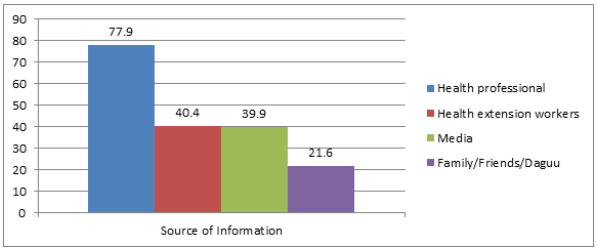

FIGURE 3: Source of information for BP/CR, Semera Logia, May 2016.

Knowledge of respondents about preparation for birth and its complication: Majority of them 208(73.5%) reported that they knew about identifying their place of birth. The respondents who knew to identify skilled health care provider constitutes 173 (61.3%). Almost half 133 (47%) of the respondents mentioned arranging means of transportation for emergency. only 17 (6%) respondents knew to arrange compatible blood donors (figure: 4)

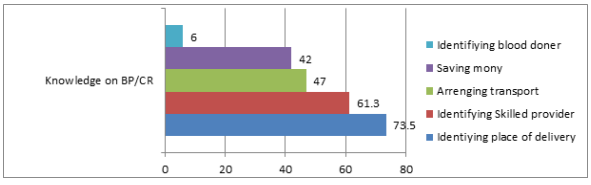

FIGURE 4: knowledge of respondents about components of BP/CR, Semera Logia, May 2016.

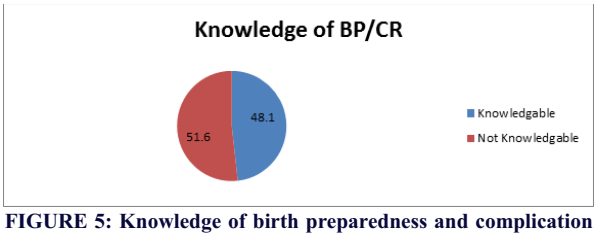

FIGURE 5: Knowledge of birth preparedness and complication readiness, Semera Logia, May 2016.

TABLE 5: Birth preparedness and complication readiness made by the study participants (N=285) , Semera Logia, May 2016.

No	Level of birth preparedness and complication readiness	Yes		No	
		Number	Percent	Number	Percent
1	Identified skilled provider	187	65.6	98	34.4
2	Identified place of delivery	254	89.1	31	10.9
3	Identified mode of transportation	137	48.8	146	51.2
4	Saved money	109	38.2	176	61.8
5	Arranged blood donor	27	9.5	258	90.5

Associated factors with their knowledge of birth preparedness & complication readiness

Association of maternal socio-demographic variables with their knowledge of birth preparedness & complication readiness: In the bivariate analysis significant association was observed between the educational status of mothers and their knowledge about birth preparedness & complication readiness. Mothers who are not able to write and read were 6 times less knowledgeable about birth preparedness & complication readiness than those who were graduates of college or university [COR=6.031, 95%CI (2.623-13.868); p<0.05]. Others maternal socio demographic variables did not have association.

Association of husband socio-demographic & maternal obstetrics

factors with their knowledge on birth preparedness & complication readiness:

In the bivariate analysis significant association was observed between average monthly income of the household and their knowledge about birth preparedness and complication readiness. As family monthly household income <1000 birr, two times less knowledgeable about birth preparedness and complication readiness than who got more than three thousand birr [COR=2.297 (1.272-4.151); p=0.002]. On the other hand from maternal obstetrics characteristics partner accompany had association with birth preparedness & complication readiness. Women who had no partner accompany were three times less knowledgeable than those women with accompany. [COR=3.66 (0.225-0.595); p<0.05].The presence of ANC follow up were the other variable which had association with knowledge of P/CR [p=0.008].

TABLE 6: Socio demographic and obstetric factors influencing BP/CR, Semera Logia, May 2016.

Variables	Knowledge of BP/CR		COR (95% CI)	AOR (95%CI)
	Yes	No		
Women's education				
Not able to write and read	20(26.3)	56(73.7)	**6.03(2.62-13.87)**	**0.23(0.093-0.593)**
Able to write and read	11(29.7)	26(70.3%)	**5.09(1.94-13.35)**	**0.29(0.102-0.824)**
Primary level	43(55.8%)	34(44.2%)	1.70(0.77-3.77)	0.59 (0.249-1.1-413)
Secondary	35(64.8%)	19(35.2%)	1.169(0.49-2.77)	0.71(2.285-1.779)
University/college	28(68.3%)	13(31.7%)	1	1
Monthly Income				
<1000	37(38.1%)	60(61.9%)	**2.29(1.272-4.151)**	0.72(0.356-1.448)
1000-3000	47(51.1%)	45(48.9%)	1.37(0.751-2.449)	0.80(0.409-1.568)
>3000	51(58.6%)	36(41.4%)	1	1
ANC				
Had ANC visit	135(50.4%)	133(49.6)	**0.13(0.03-0.59)**	1.794(1.018-3.16)
NO partner accompany	43(53.1%)	38(46.9%)	**3.66(0.225-0.592)**	1.79(1.018-3.160)

Association between Socio demographic and obstetric characteristics on birth preparedness & complication readiness: On binary logistic regression, knowledge of danger signs during child birth/ labor, and partner accompany were found to have statistically significant association with birth preparedness and complication readiness.

Multiple logistic regression analysis was also computed to control the possible confounder, explores the association between independent variables and birth preparedness and complication readiness. Both Knowledge of danger signs during child birth/ labor, and partner accompany were significantly associated with birth preparedness & complication readiness. The adjusted odd ratio of birth preparedness and complication readiness was two times greater among respondents who had partner accompany when compared to those who don't have. [AOR = 2.356, 95% CI (1.277, 4.35); p<0.05]. Adjusted odd ratio of birth preparedness and complication readiness among knowledgeable about danger signs during labor were two times more when compared to those who lack knowledge about it.[AOR=2.071, 95%CI (1.034-4.15);p<0.05]. (Table: 12).

TABLE 7: Socio-demographic and obstetric factors influencing birth preparedness, Semera Logia, May 2016.

Variables	Birth preparedness		COR (95%CI)	AOR(95 %CI)
	Yes	No		
Maternal Education				
Not able to write & read	25(32.9)	51(67.1%)	1.6(0.43-5.99)	.625(0.167-2.342)
Able to write &read	25(67.6%)	12(3.4%)	0.44(0.12-1.69)	2.282(0.59-8.8)
Primary School	44(51.1%)	33(42.9)	108(0.61-5.32)	0.555(0.188-1.642)
Secondary School	37(38.5%)	17(31.5%)	1.95(0.68-5.6)	0.513(0.179-1041)
University/college	30(73.2%)	11(26.8%)	1	1
Paternal Education	.		.	.
Not able to write &read	18(32.77%)	37(67.3%)	1.71(0.498-5.84)	0.586(0.17-2)
Able to write &read	25(48.1%)	2(51.9%)	1.74(0.62-4.87)	0.574(0.2-1.6)
Primary School	20(51.3%)	19(48.7%)	1.36(0.49-3.78)	0.734(0.264-2.038)
Secondary School	39(76.5%)	12(23.5%)	0.59(0.24-1.48)	1.682(0.67-4.2)
University/college	57(67.9%)	27(32.1%)	1	1
ANC visit	.		.	.
Had visit	115(59.3%)	109(40.7%)	0.328(0.06-1.77)	3.049(0.56-16.5)
Partner accompany	112(69.1%)	50(30.9)	**0.296(0.18-0.48)**	**2.356(1.277-4.35)**
Any health problem during pregnancy	.		.	.
Problem Experienced	67(71.3%)	27(28.7%)	0.57(0.29-1.1).	1.758(0.91-3.45)
Danger signs	.		.	.
During post natal period	106(69.3%)	47(30.7%)	0.704(0.35-1.41)	1.42(0.698-2.891)
During labor	112(70.4%)	47(29.6%)	**0.483(0.241-0.97)**	**2.071(1.034-4.15)**
Gravida	.		.	.
One	37(62.7%)	22(37.3%)	0.39(0.15-1.02)	2.59(0.98-6.833)
2-4	101(58.7%)	71(41.3%)	0.68(0.30 21.51)	1.48(0.66-3.32)
Monthly Income	.		.	.
<1000	43(44.3%)	54(55.7%)	1.4(0.66-3.03)	0.72(0.33-1.5)
1000-3000	24(58.7%)	38(41.3%)	1.2(0.58-2.58)	0.8170.39-1.73)

DISCUSSION

Knowledge of respondents about danger signs during pregnancy: In this study the proportion of respondent who reported that they have information about danger signs of pregnancy were 183(64.2%); this is lower compared to Mekelle town study which is 79.9% out of 422 pregnant women (7). Those spontaneously mention knowledge of danger signs during pregnancy is; 175(795.6%) mentioned vaginal bleeding, this was very high when compared to studies in Adigrat town, North part of Ethiopia 10.9% out of 534 pregnant women (1) and in Robe wereda, Arise zone 10.1% out of 575 pregnant women (11). The second & third key danger signs mentioned were severe headache and swollen hands & face which is 74 (40.4%) & 54 (29.5%) respectively. This is high comparing with the study done in Robe wereda, Aresi zone 2.2 % & 37.7% (11).These difference might be due to geographically; health facilities proximity, parity & use of methodology. In this result greater than half of the women have information on danger sign of pregnancy.

Knowledge on danger signs during labor/childbirth: The women that have information on danger signs during labor /child birth 159(55.8%). Among these 159 respondents, spontaneously mention knowledge of danger signs during child birth were; vaginal bleeding 152 (95.6%), labor lasting more than 24 hours 119 (74.8%), convulsion 38 (23.9%) & the placenta not delivered 30 minutes after the neonate 56(35.2%).This finding was higher than the study in Adigrat town, North Ethiopia study that were (16.5), (11), (0.6) and (7.1) for vaginal bleeding, labor lasting more than 24 hours, convulsion placenta not delivered 30 minutes after delivery respectively. This variation might be due to smaller sample size of the study.

Knowledge on danger signs during post-partum period: 154(54%)

of women that have information on danger signs during post-partum period. From these, spontaneously mention knowledge of danger signs during post-partum period mentioned were; vaginal bleeding 149 (96.8%), foul smelling vaginal discharge 15 (9.7%) & high fever 32 (20.8%). This result were relatively high compared to Adigrat town, North Ethiopia study; severe vaginal bleeding (16.7)%, foul smelling vaginal discharge (1.5)% & high fever (1.1%).These result discrepancy might be due to parity. In this finding, the knowledge of danger signs during pregnancy, labor & postpartum majority of the respondent mentioned vaginal bleeding as a danger sign.

Knowledge on danger signs during neonatal period: 164(57.5%), who reported that they have information about danger signs during neonatal period. From these, 12 (7.3%) disclosed convulsion. This is low compared to (22.5%) Addis Ababa governmental health facilities study (13). This could be due to the reason that women did not perceive convulsion as serious health problem, rather just a onetime experienced event.

Knowledge and practice of birth preparedness and complication readiness From 285women, 207 (76.2%) of the respondents speak out that they heard the term birth preparedness. This finding is relatively similar compared to Basoliben district, Amhara Regional State, North West Ethiopia study (76%) (14). 38.2% of women saved money. This is less than findings from Adigrat 68.9%. This might be due to the traditional belief that once a child is born things will go write based on the childe chance.

CONCLUSION:

43.5% were not well prepared for birth and its complications in their last pregnancy. The study result revealed that birth preparedness and complication readiness is not well known and practiced in the study area. This is may be due to lack of knowledge about severity of danger signs of obstetric complications and about the importance of getting skilled care during pregnancy, childbirth and postnatal period even though no any health problems rose. Educational status, ANC follow up, and partner accompany were independent predictors of birth preparedness and complication readiness.

Recommendations:

Educations were found to be one of the predictors of BP/CR. Therefore, Logia district health office in collaboration with other stake holders such as Logia distrct education office should further strengthen their effort to empower women with education.

Health professionals during antenatal care should give due emphasis on birth preparedness and complication readiness plan to improve access to skilled and emergency obstetric care.

Further study can be done on quality of ANC in focus of birth preparedness and complication readiness to assess whether health professionals appropriately advise and provide health information concerning birth preparedness and complication readiness.

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