Assessments of Birth Preparedness and Complication Readiness Among Women of Childbirth in Samara Logia Town, Afar, North East Ethiopia

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Abstract: Background: Every day thousands of women die due to obstetric complications during pregnancy and childbirth. Most of the problems are preventable. The finding showed that these deaths were high in developing countries. Based on the evidence birth preparedness and complication readiness plan is a critical strategy to, reduce maternal and newborn complications and mortalities during pregnancy and childbirth. Objective: Prevalence and associated factors of birth preparedness and complication readiness among childbirth women in Samara -Logia, Ethiopia, 2019. Method and Materials: A community-based cross-sectional study design was conducted from January 22 to April 22/ 2019. The samples were selected using a stratified sampling procedure to select the total sample size. Data were entered into Epi data version 02 and exported to SPSS Version 20 for analysis. Bi-variety and multi-variant regression were carried out to determine the associated factors and p-value < 05 has been considered significant. Result: This finding showed that from 285 respondents 75 % had ever heard about birth preparedness and complication readiness. Among the total finding, 45% of the respondents were not prepared for birth and its complications. Mothers who complain of danger signs during labor (AOR = 0.7 (0.34-1.5) and partner accompany (AOR = 3.6 (2.7-3.5) were significantly associated with birth preparedness and complication readiness. Conclusion and Recommendation: this study identifies only 58% of women were knowledgeable about birth preparedness and complication readiness. Variables having a statistically significant with birth preparedness and complication readiness were the presence of danger signs during labor and partner involvement during pregnancy. Therefore, there should be increased education, promotion of ANC, and counseling of mothers by health workers to improve their knowledge of danger signs and ANC follow up.

Keywords: Birth Preparedness and Complication Readiness, Childbirth Women, Samara–Logia

1. Background of the Study
Pregnancy and childbirth are threatened women's life because of obstetric complications. Yearly, global maternal deaths contribute more than half a million deaths, besides these, 99% occur in developing countries. disproportionately high burden of these deaths is occurred by developing countries [1, 2].

Birth-Preparedness and Complication-Readiness is a package to empower women, her family, and the community to promote maternal and neonatal survival. Ministry of Health of Ethiopia and WHO commends that pregnant women should receive focused antenatal care this is because Every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself as well as her infant. BPCR is a comprehensive matrix that includes preparing pregnant women, their families, communities, providers, facilities, and policymakers to reduce the delays that contribute to maternal and newborn
Regardles of the great ability of Birth Preparedness and Complication Readiness in reducing the maternal and newborn deaths its reputation is not well identified in most of sub-Saharan Africa especially in Ethiopia. Birth-preparedness and complication-readiness (BP/CR) is a key tool to reduce complications and promote maternal and neonatal survival during pregnancy as well as the labor delivery period [1, 3, 7, 8].

Birth preparedness and complication readiness (BP/CR) is a wide-ranging aimed at promoting timely access to skilled maternal and neonatal services during pregnancy, delivery, and post-natal period. It encourages active preparation and decision making for delivery by pregnant women and their families [8, 9].

A study done in Tanzania showed that Despite the ANC services, knowledge on pregnancy complications is still low and this contributes to rearrangement in looking for health care and complication redness. This tendency shows that pregnant women may be missing important packages of ANC because they lack awareness of birth preparedness and complication redness during pregnancy period. Male involvement in reproductive health during pregnancy has been encouraged for capable of the new strategy for increasing maternal and child health [10, 11].

The safe motherhood initiative stated that skilled health professionals to assist childbirth is the most appropriate intervention to reduce maternal mortality. However, in Ethiopia according to EDHS 2011 report, only 10% of births were attended by health professionals. This relevant decline of maternal mortality ratio and insignificant enhancement of skilled birth attendance might be due to inappropriate use of birth preparedness and complication readiness [12, 13].

Birth preparedness and complication readiness is an essential component of safe motherhood programs that encourage proper utilization of skilled maternal and neonatal care. It is also important to expand the use of skilled providers and the key intervention to minimize maternal mortality. Preparing for childbirth and its possible complications can diminish delays in seeking care. In Ethiopia, there was limited data on birth preparedness and complication readiness at the regional level, especially in the Afar regional state. Therefore, the aim of this study was to assess the status of birth preparedness and complication readiness among pregnant women in Samara Logia town, Afar region, Ethiopia, 2019 [14, 15]

2. Methods and Materials

2.1. Study Area

The study was conducted in Samara Logia town, Afar region which one of Agro-Pastoral community in Ethiopia. Samara is the capital city of Afar regional state located 580 km North-East of Addis Ababa. Samara has a latitude and longitude of 11 47’32”N 41 0’31”E/179222 N 400861 E. At an average temperature of 33°C. The total population of Samara Logia town in 2016 is 29, 72. From this, 6777 are reproductive age group women and out of this, women who had delivered in the last two years are 1375 [16]. The town has one kebele and 13 villages. Five villages are found in Samara and eight villages are found in Logia. The town has two health centers.

Study design and study period community-based cross-sectional quantitative study design was conducted among child birth women from January 22 to April 22/2019.

2.2. Source of Population

The study population is all reproductive-age women who live in Samara-Logia town from January 22 to April 22/2019.

2.3. Study Population

All reproductive age women who had delivered within the last two years preceding the date of the survey in Samara-Logia town.

2.4. Study Unit

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

2.5. Inclusion and Exclusion Criteria

2.5.1. Inclusion Criteria

All childbearing age women who gave birth during the two years before the study in Samara Logia town.

2.5.2. Exclusion Criteria

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

2.6. Sample Size Determination and Sampling Technique

The study was employed by using single population proportion sample size determination formula. Twenty three point three percent (23%) proportion (p) of birth preparedness and complication readiness [17] with 95% CI, and 5% marginal error (where n is desired sample size, Z is the value of the standard normal variable at 95% confidence interval and, p is proportion of Birth preparedness and complication readiness and d is a marginal error which is 5%) was considered to calculate the sample size. The samples were selected using a stratified sampling procedure to select the total sample size properly, and a 10% contingency for non-respondents was also added. After all, the final sample size became 28.

2.7. Data Collection Materials and Procedures

Data was collected by using a structured interviewer-
administered questionnaire by four selected midwifery staff. The tool is adapted from the survey tools developed from birth preparedness and complication readiness among rural women of reproductive age in Abeshige woreda, Gurage zone, SNNPR, Ethiopia [15]. During data collection, the purpose of the study was clearly explained for respondents. Also, the right, privacy, and cultural taboos were respected. Finally, verbal consent was obtained from Samara university college of medical and health science, department of midwifery.

2.8. Variables

2.8.1. Dependent Variables
Birth preparedness and complication readiness

2.8.2. Independent Variables
Maternal demographic characteristics
Obstetric factors
Household income
Awareness of danger signs

2.9. Data Analysis
The collected data were checked for its completeness and consistencies. Then, it was cleaned, coded, and entered into Epi data Version 0 and exported to statistical package for social sciences (SPSS) version 20 to identify significant association factors. First, simple frequency distribution was calculated. Multiple Logistic regression analysis was also done to identify factors associated with Birth Preparedness and Complication Readiness, the p-values <0.05 were considered to indicate statistical significance.

2.10. Ethical Consideration
A Formal letter of permission was obtained from Samara University College of Medical and Health Science to communicate with Samara-Logia health office administrator. The researcher informed about the aim of the study and the confidentiality of the information before reviewing the data.

3. Results
Socio -Demographic Characteristics of The Participants (N=285).
This study was conducted on a total of 285 reproductive age women those who gave birth in the last two years at Samara Logia town. Out of these, 111 (39%) were between in the age range of 20 and 2 Majority of the participants 264 (96%) were married. Besides these most of participants 189 (63%) were house wives (Table 1).

| Variable | Frequency | Percent |
|----------|-----------|---------|
| Town     |           |         |
| Logia    | 251       | 81      |
| Samara   | 34        | 19      |
| Age in years |        |         |

Obstetric Characteristics of The Respondents.
From a total of 285 reproductive age women who had delivered in the last two years, 268 (94) were found to receive ANC, from this majority of them 223 (82%) found to receive ANC within 1 to 4 months and 166 (69) of them had 2 - 3 times ANC follow up. Details are show in the table below. (Table 2).

| Variables | Frequencies | percentage |
|-----------|-------------|------------|
| Total Number of Pregnancies | 59 | 27 |
| 2 to 4 | 172 | 64 |
| 5 and above | 54 | 19 |

Table 1. Distribution of socio demographic and socio-economic variables, Samara -Logia town, May 2019.

Table 2. Obstetric characteristics of respondents in Samara-Logia town, May 2019.
Knowledge of danger Signs During Labor/Childbirth In Samara -Logia Town, 2019.

With regard to serious health problem/s that can occur during labor and child birth could endanger the life of pregnant women, greater than half of them 159 (58%) were knowledgeable. Out of 159 women, 152 (96%) mentioned vaginal bleeding, 119 (78%) have mentioned placenta not delivered 30 minutes after the newborn as a danger sign.

Knowledge of danger signs during pregnancy in samara logia town, 2019.

According to the response found from participant reproductive age women who had delivered within the last two years, two third of the participants 183 (62%) 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 (38%) don’t know those signs (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 2019.

| Variables                          | Danger signs during pregnancy | Danger signs 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)                      |                          |             |
| 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.

From 285 respondents, 164 (55%) stated that they knew any danger signs of new born during child birth. Out of those 12 (3%) reported convulsion as danger sign & 23 (14%) have reported lethargy or loss of consciousness as danger sign (Table 4).

### Table 4. Knowledge about danger signs of newborn, Samara Logia, 2019.

| Variables                          | Yes | No |
|-----------------------------------|-----|----|
| Any danger signs                   | 164 | 121|
| Difficult/fast breathing           | 123 | 41 |
| Poor sucking                       | 113 | 51 |
| Pus/bleeding from the cord         | 96  | 45 |
| Convulsion                         | 12  | 97 |
| Lethargy                           | 23  | 141|
| Red/swollen eye with pus           | 9   | 155|
| Failure to suck                    | 39  | 125|
|                                          |    |    |

Source of Information About Birth Preparedness (N=285)

Out of 285 respondents, 207 (72%) stated that they heard the word birth preparedness. Out of the total respondents, 162 (79%) have reported as they heard from the health professional (Figure 1).

Knowledge of Respondents About Preparation For Birth And Its Complication (N=283).

Among 283 respondents, majority of them 208 (75%) reported that they knew about identifying their place of birth. More than half 133 (47%) of the respondents mentioned arranging means of transportation for emergency. On the other hand, it was only 17 (6%) respondents knew to arrange compatible blood donors (Figure 2).
Prevalence of Birth preparedness and complication readiness
From a total of 285 participants, 137 (41%) has good knowledge about birth preparedness and complication readiness, the rest 147 (56) has poor knowledge. From the total participants 124 (45%) were not well prepared for birth during the last pregnancy period.

Association Factors with Their Knowledge of Birth Preparedness & Complication Readiness, Samara -Logia Town, 2019.

In this finding 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=031 (623-1868 (., 95% CI). The study showed that the family monthly income <1000 birr, was two times less knowledgeable about birth preparedness and complication readiness than who got more than 3000 birrs 297 (272-151) 95% CI]. On the other hand, Women who had no partner accompany were three times less knowledgeable than those women attend with their parents. [COR=66 (225-595) 95%CI]. The presence of ANC follows up were also eight times more likely knowledgeable than had no ANC follow up 794 (018-16) 95% CI.

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 to identify confounding variables. This finding showed that knowledge about birth preparedness and complication readiness about danger signs during labor were two times more likely than who lack of knowledge about BP/CR. [AOR=071, 95%CI (034- 15)] (Table 5).

Table 5. Association factors with their knowledge of birth preparedness & complication readiness, samara -logia town, 2019.

| Variables                              | Knowledge of BP/CR |   |   |
|----------------------------------------|--------------------|---|---|
|                                        | Yes (95% CI)       | AOR (95%CI) |
|                                        | No (95% CI)        |   |   |
| Maternal Education                     |                    |   |   |
| Not able to write & read               | 25(59)             | 51(61%) | 6(43-99) | 625(17-342) |
| Able to write & read                   | 25(66%)            | 12(4%)  | 44(12-69) | 28(59-8)   |
| Primary School                         | 44(51%)            | 33(49)  | 108(61-32) | 555(18-64) |
| Secondary School                       | 37(55%)            | 17(35%) | 95(68-6)  | 513(17-1041)|
| University/college                     | 30(72)             | 11(28%) | 1         | 1         |
| Paternal Education                     |                    |   |   |
| Not able to write & read               | 18(377%)           | 37(63%) | 71(498-84) | 58(17-0)   |
| Able to write & read                   | 25(41%)            | 2(59%)  | 74(62-87)  | 57(2-6)    |
| Primary School                         | 20(53%)            | 19(47%) | 36(49-78)  | 73(264-038)|
| Secondary School                       | 39(75%)            | 12(25%) | 59(24-48)  | 68(67-2)   |
| University/college                     | 57(69%)            | 27(31%) | 1         | 1         |
| ANC visit                              |                    |   |   |
| Had visit                              | 115(53%)           | 109(47%) | 33(06-77) | 049(56-15) |
| Partner accompany                      | 112(61%)           | 50(39)  | 29(18-48)  | 356(277-35) *|
| Any health problem during pregnancy    |                    |   |   |
| Problem Experienced                    | 67(73%)            | 27(27)  | 57(29-1)   | 75(91-45)  |
| Danger signs                           |                    |   |   |
| During post-natal period               | 106(63%)           | 47(37)  | 70(35-41)  | 42(698-891) |
| During labor                           | 112(74%)           | 47(26)  | 48(24-97)  | 071(034-15) *|
| Gravida                                |                    |   |   |
| One                                    | 37(67%)            | 22(33)  | 39(15-02)  | 59(98-833) |
| 2-4                                    | 101(57%)           | 71(43)  | 68(30251)  | 48(66-32)   |
| Monthly Income                         |                    |   |   |
| <1000                                  | 43(43%)            | 54(57)  | 4(66-03)   | 72(33-59)  |
| 1000-3000                              | 24(57%)            | 38(43)  | 2(58-58)   | 817(39-73) |

* P value less than 05
4. Discussion

This study was assessed the prevalence and determinant factor of birth preparedness and complication redness plan in samara logia town among childbirth women. Currently WHO recommend that women received four ANC visit during pregnancy This study showed that the coverage of birth preparedness and complication redness plan in samara – logia town was 41%. This study showed that significant number of women had less knowledge about BP/CR. This figure is less significant than study done in dire dawa city (51%) [3] and good knowledge than study done in Goba Woreda, Oromia region (16%) [9]. This difference could be due to the number of sample size and living style of the participants. Knowledge of the danger signs of obstetric complications is the first step to seek timely care at appropriate health facility. This study showed that participants who know about the danger sign during pregnancy were 62%. This study showed that it was Slightly more than study done in Goba woreda, Oromia region 48% [9] and Abeshinge woreda, Gourse zone 67% [15]. This is important to create sustainable mechanism to increase the maternal awareness about danger sign.

This finding showed that those women who were complain vaginal bleeding during labour/child birth were 96%. This was very high compared to study done in Adigrat town, Tigray region (15%) [5], in Goba woreda, Oromia region 11% [9], Chora district health center, western harerergae 79% [17] and West Bengal, India 12% [4]. This finding emphasized working women needs focused attention during labour and delivery period to save their life.

In the present study pregnant women who have less than three ANC checkup were more likely those women have four ANC checkup during their pregnancy period. This figure showed that women who have fourth ANC checkup were less than in Kofele district, Oromia region [2], and Nepal [14]. In this regard there was difficulty to identify late maternal danger sign. Increasing of knowledge about the benefit of BP/CR is mandatory to reduce maternal as well as fetal complication, during pregnancy, child birth and post-natal period.

5. Conclusion and Recommendation

From 285 respondents 45% 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. Therefore, there should be increased education, promotion of ANC and counseling of mothers by health workers to improve their knowledge on danger signs and ANC follow up.

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Conflict of Interest

There are no conflicts of interest in this work.

Author’s Contribution

NA, MA, NB and BA: Conceived and designed the protocol as well as performed the data collection and contributed to data analysis and wrote the paper.

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