

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

Nigusie Abebaw^{1,*}, Mohammed Abdu¹, Nejimu Biza¹, Betel Assalfew²

¹Faculty of Medical and Health Science, Samara University, Samara, Ethiopia

²Faculty of Health Science, Woldeya University, Woldeya, Ethiopia

Email address:

nigusieabebaw@gmail.com (N. Abebaw), mdabdu0@gmail.com (M. Abdu), betelassalfew@yahoo.com (B. Assalfew)

*Corresponding author

To cite this article:

Nigusie Abebaw, Mohammed Abdu, Nejimu Biza, Betel Assalfew. Assessments of Birth Preparedness and Complication Readiness Among Women of Childbirth in Samara Logia Town, Afar, North East Ethiopia. *American Journal of Laboratory Medicine*.

Vol. 5, No. 4, 2020, pp. 95-101. doi: 10.11648/j.ajlm.20200504.13

Received: June 14, 2020; **Accepted:** June 28, 2020; **Published:** August 5, 2020

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 =07 (034-15) and partner accompany (AOR = 36 (27-35) 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

deaths by ensuring the woman receives timely and appropriate care as well as timely preparation and rapid action [3-6].

Regardless 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 source 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 to 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 <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).

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

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

Variable	Frequency	Percent
15-19	6	1
20-24	111	39
25-29	106	32
30-34	42	17
35-39	12	2
40-44	8	8
45-49	0	0
Marital status		
Married	264	96
Divorced	14	9
Widowed	3	1
Separated	4	4
Religion		
Muslim	207	76
Orthodox	72	23
protestant	6	1
Total	285	100
Ethnicity		
Afar	104	35
Amhara	134	47
Tigre	32	12
Oromo	14	9
Others	1	4
Occupation		
Housewife	189	63
Gov't employee	23	1
Merchant	45	18
Private employee	6	1
Daily laborer	20	7
Maternal educational status		
Not able to write &read	27	76
Able to write &read	13	37
Primary Education (1-8)	27	77
Secondary education (9-12)	19	54
College or university	14	41
Paternal educational status		
Not able to write and read	55	13
Able to write and read	52	12
Primary education (1-8)	39	17
Secondary education (9-12)	51	19
College or university	81	25
Don't know	4	4
Average monthly income		
<1000 birr	97	34
1000-3000 birr	92	33
>3000 birr	87	35
Don't know	9	2

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).

Table 2. Obstetric characteristics of respondents in Samara- Logia town, May 2019.

Variables	Frequencies	percentage
Total Number of Pregnancies		
1	59	27
2 to 4	172	64
5 and above	54	19
Total number of deliveries		

Variables	Frequencies	percentage
Total Number of Pregnancies		
1	59	27
2-4	168	59
5 and above	39	17
Ever had Stillbirth		
Yes	32	12
No	253	88
Total	100	100
Received ANC		
Yes	268	94
No	17	6
First ANC received (in months) n=268		
1-4	223	82
5-6	41	13
>=7	4	5
Number of ANC visits (n=268)		63
<3	175	37
>=4	93	5
Partner support during ANC		
Yes	162	58
No	123	42
Any serious health problems related to pregnancy		
Yes	94	33
No	191	67
Problems experienced related to pregnancy		
Vaginal bleeding	74	77
Sever fever	50	52
Absence or reduced fetal movement	33	32
Swollen face or hand	12	18
Headache / blurred vision	26	27
Seizure/convulsion	3	2
Leakage of fluid per vagina	6	4
Others	4	3
Health seeking behavior		
Yes	91	98
No	3	2
Final decision to assist health problems made by		
Herself	9	6
Both	82	82
Her husband	3	2

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.

Danger signs	Danger signs		
	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.

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	
	Number	Percent	Number	Percent
Any danger signs	164	55	121	45
Difficult/fast breathing	123	75	41	25
Poor sucking	113	69	51	31
Pus/bleeding from the cord	96	55	68	45
Convulsion	12	3	152	97
Lethargy	23	14	141	86
Red/swollen eye with pus	9	5	155	95
Failure to suck	39	28	125	72

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).

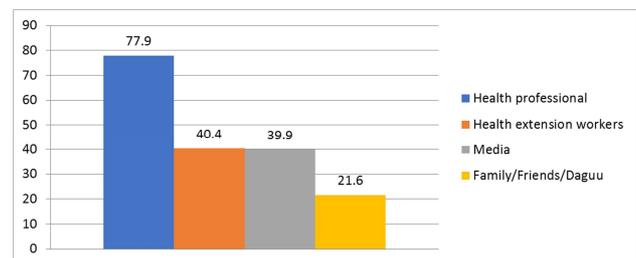


Figure 1. Source of information for BP/CR, Samara -Logia, May 2019.

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).

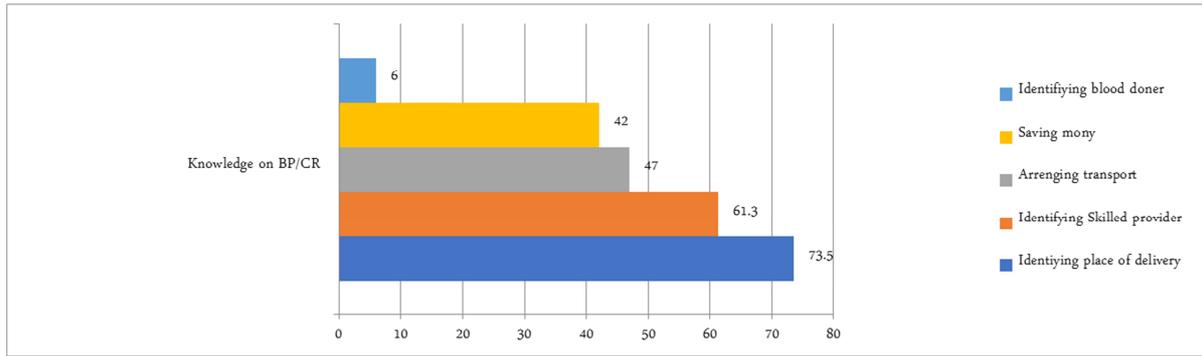


Figure 2. Knowledge of respondents about components of BP/CR, Samara- Logia, May 2019.

Prevalence of Birth preparedness and complication redness
 From a total of 285 participants, 137 (41%) has good knowledge about birth preparedness and complication redness, 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=0.31 (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=0.71, 95%CI (0.34- 15)] (Table 5).

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

Variables	Knowledge of BP/CR		COR (95% CI)	AOR (95%CI)
	Yes	No		
Maternal Education				
Not able to write &read	25(39)	51(61%)	6(43-99)	625(17-342)
Able to write &read	25(66%)	12(4%)	44(12-69)	282(59-8)
Primary School	44(51%)	33(49)	108(61-32)	555(18-64)
Secondary School	37(35%)	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)	586(17-0)
Able to write &read	25(41%)	2(59%)	74(62-87)	574(2-6)
Primary School	20(53%)	19(47%)	36(49-78)	734(264-038)
Secondary School	39(75%)	12(25%)	59(24-48)	682(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)	758(91-45)
Danger signs				
During post -natal period	106(63%)	47(37)	704(35-41)	42(698-891)
During labor	112(74%)	47(26)	483(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 readiness 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 readiness 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, Gource 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 harergae 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 pos -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.

Acknowledgements

We would like to thanks Samara university, Afar Health bureau and Samara -logia administrative bureau to give this chance. We are also grateful for all those participating in the data collection process and we acknowledge all those who contributed to this study.

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.

References

- [1] Berhe AK, Muche AA, Fekadu GA, Kassa GM. Birth preparedness and complication readiness among pregnant women in Ethiopia: a systematic review and Meta-analysis. *Reproductive health*. 2018; 15 (1): 182.
- [2] Hiluf M FMBPaCRaWiAt, North Ethiopia. *Ethiop J. Health Dev*. 2007, 22 (1): 14-20 Tafa, Adugna, Hailu D., Ebrahim J., Gebrie M., Wakgari N. Birth preparedness and complication readiness plan among antenatal care attendants in Kofale District, south East Ethiopia: a cross sectional survey. *Diversity & Equality in Health and Care*. 2018; 15 (1): 23-9.
- [3] Musa A., Amano A. Determinants of birth preparedness and complication readiness among pregnant woman attending antenatal care at Dilchora Referral Hospital, Dire Dawa City, East Ethiopia. *Gynecol Obstet (Sunnyvale)*. 2016; 6 (2): 356.
- [4] Mazumdar R., Mukhopadhyay D., Kole S., Mallik D., Sinhababu A. Status of birth preparedness and complication readiness in a rural community: a study from West Bengal, India. *Al Ameen J. Med Sci*. 2014; 7 (1): 52-7.
- [5] Urassa DP, Pembe AB, Mganga F. Birth preparedness and complication readiness among women in Mpwapwa district, Tanzania. *Tanzania journal of health research*. 2012; 14 (1).
- [6] Ekabua JE, Ekabua KJ, Odusolu P., Agan TU, Iklaki CU, Etokidem AJ. Awareness of birth preparedness and complication readiness in southeastern Nigeria. *ISRN obstetrics and gynecology*. 2011; 2011.
- [7] Assessment of Magnitude and Factors Associated with Birth Preparedness and Complication Readiness Among Pregnant Women Attending Antenatal Clinic of Adama Town Health Facilities C. B., Tesfaye Y., Zelalem E., Ubong U., Kumalo A. Assessment of birth preparedness and complication readiness among pregnant mothers attending ante Natal Care Service in Mizan-Tepi University Teaching Hospital, South West Ethiopia. *Clinics Mother Child Health*. 2017; 14 (257): 2.
- [8] Lerberg PM, Sundby J., Jammeh A., Fretheim A. Barriers to skilled birth attendance: a survey among mothers in rural Gambia. *African journal of reproductive health*. 2014; 18 (1): 35-43.

- [9] Markos D., Bogale D. Birth preparedness and complication readiness among women of child bearing age group in Goba woreda, Oromia region, Ethiopia. *BMC pregnancy and childbirth*. 2014; 14 (1): 282.
- [10] Magoma M., Requejo J., Campbell O., Cousens S., Merialdi M., Filippi V. The effectiveness of birth plans in increasing use of skilled care at delivery and postnatal care in rural Tanzania: a cluster randomised trial. *Tropical medicine & international health*. 2013; 18 (4): 435-43.
- [11] Paulos K., Awoke N., Mekonnen B., Arba A. Male involvement in birth preparedness and complication readiness for emergency referral at Sodo town of Wolaita zone, South Ethiopia: a cross sectional study. *BMC Pregnancy and Childbirth*. 2020; 20 (1): 62.
- [12] Iliyasu Z., Abubakar IS, Galadanci HS, Aliyu MH. Birth preparedness, complication readiness and fathers' participation in maternity care in a northern Nigerian community. *African journal of reproductive health*. 2010; 14 (1).
- [13] Dessu S., Dawit Z., Bojola F. Assessment of birth preparedness & complication readiness and associated factors among ANC attendant pregnant mothers in Arba Minch Town Governmental Institutions, Arba Minch, Southern Ethiopia. *Int J Sex Reprod Health Care*. 2019; 2 (1): 001-5.
- [14] Dhakal P., Shrestha M. Knowledge on birth preparedness and complication readiness in Eastern Region of Nepal. *Int J. Nurs Midwifery*. 2016; 8 (10): 75-80.
- [15] Zepre K. Birth Preparedness and Complication Readiness among Rural Women of Reproductive Age in Abeshige Wored Guraghe Zone, SNNPR, Ethiopia: Addis Ababa University; 2015.
- [16] Sarwar MB, Samman E., Greenhill R. Good Practices for Financing Statistical Development.
- [17] Regesu AH, Oda AT, Adem MK. Birth Preparedness and Complication Readiness and Associated Factors among Mothers Attending Antenatal Care at Chiro District Health Centers, West Hararge, Ethiopia. *International Journal of Health Sciences and Research*. 2019; 9 (4): 187-95.