Original Research

EAST AFRICAN JOURNAL OF PASTORLAISM

Volume 1, Issue 2

Knowledge about Obstetric Danger Signs and Associated Factors among Pregnant Mothers in Jigjiga City, Somali Regional State, Eastern, Ethiopia

Semhal Haile[a,*], Liyew Mekonen[b], Zemenu Shiferaw[b], Adisalem Degefu[c], Nardos Getachew [a], Yosef Alemayehu [a] and Diana Issak[b]

[a]*Department of Midwifery, College of Medicine and Health Science, Jigjiga University, Jigjiga Ethiopia*

[b]*Department of Public Health, College of Medicine and Health Science, Jigjiga University, Jigjiga Ethiopia*

[c] *School of Medicine, College of Medicine and Health Science, Jigjiga University, Jigjiga Ethiopia*

ABSTRACT

Awareness of danger signs during pregnancy is the first step to seeking appropriate and timely referral to emergency obstetric care and this reduces the first and second delays.Even though there is significant improvement in utilization of antenatal care, there is limited information about the level of knowledge on danger signs of obstetric complications among pregnant mothers. When mothers do not recognize the danger signs in pregnancy, adverse effects can occur to the mother, the unborn baby, or the pregnancy itself. Therefore, this study was conducted to assess knowledge about danger signs of obstetric complications and associated factors among pregnant mothers in Jigjiga Town, Somali Regional State, Ethiopia A community based cross sectional study was employed from February 1- 18. Multistage random sampling techniques was used to select 442 pregnant women using interview administered questionnaire. Data entry and analysis was performed by Epidata version 3.1 and SPSS version 20 software respectively. Bivariate and multiple analysis was carried. Later on, adjusted odd ratio was calculated at 95% CI and was used as measure of association. Finally, variables whose p value less than 0.05 in logistic regression was considered as statistically significant association. In this study, about 162 (37.9 %) (95% CI 33%, 42 %) pregnant mothers were knowledgeable about obstetric danger signs. The odds of knowledge on obstetrics danger signs increased for mothers have formal education (AOR=9.0, 95CI%=4.5-17.8), husbands who have formal education (AOR=2.0, 95 CI%=1.1-3.5), those who have mass media access (AOR=7.2, 95 CI %=4.0-12.9) and mother who had ANC (AOR=4.8, 95CI%=2.8-8.3) with their respective counter parts. This study showed low level knowledge of obstetric danger signs during pregnancy, child birth and postpartum period among women in Jigjiga City. There is a need to promote antenatal care and provide information via mass media about danger signs of obstetric complications.

Keywords: Knowledge, danger signs of obstetric complications, Jigjiga City

1. Introduction

Awareness of the danger signs of pregnancy is thus the first step to seeking appropriate and timely referral to emergency obstetric care and this reduces the first and second delays (Ossai and Uzochukwu, 2015). In any woman's life pregnancy is a normal process that comes after physiological and psychological development. However, a normal pregnancy can be associated with some problems and complication which can threat the life of the mother and/or fetus (Mathai et al., 2003).In most developing countries pregnancy and childbirth complications are the major reasons for morbidity and mortality of women in their reproductive age (El-Nagar et al., 2017).

Antenatal care provides opportunity to detect and manages high-risk pregnancies on time. This gives chance to educate, represent and communicate with women during pregnancy and childbirth so that they could make appropriate action particularly in time of danger. Health care provider with Midwifery skills plays a crucial role in promoting an awareness of the public health issues for the pregnant woman and her family, as well as helping the pregnant woman to recognize complications of pregnancy and where to seek medical assistance (Rashad and Essa, 2010).

Birth Preparedness and Complication Readiness Plan is one very important outcome of good quality ANC. In this process, pregnant women and their partners will be oriented

* Corresponding author Semhal Haile: semhalhaile3@gmail.com

Article Information:
Received: 15 September 2020
Revised: 21 November 2020
Accepted: 18 December 2020
Available Online: 30 December 2020
How to Cite this Article:
Haile S., Mekonen L., Shiferaw Z., Degefu A., Getachew N., Alemayehu Y. & Issak D(2020): Knowledge about Obstetric Danger Signs and Associated Factors among Pregnant Mothers in Jigjiga City, Somali Regional State, Eastern, Ethiopia. East African Journal of Pastoralism, 1(2):13-19 2020.

on danger signs during pregnancy, child birth and what to do after noticing them (FMOH, 2006).

According to the 2005 World Health Organization (WHO) report indicates that Over 30 million women in the developing countries suffer from serious obstetric complications as a result of inadequate or inappropriate care during pregnancy, delivery and the first few critical hours after birth (WHO, 2005). Around 80% worldwide of maternal deaths are the result of direct obstetric complications that include hemorrhage, infection, obstructed and prolonged labor, and unsafe abortion and hypertensive disorders of pregnancy(Hailu and Berhe, 2014).

The United Nations' (UN) Sustainable Development Goals (SDGs) has set (MMR) to less than 70 per 100 000 live births by 2030 (SDG 3.1). Ethiopia has made notable progress in decreasing maternal mortality ratio from 676 in 2011 to 353 in 2015 per 100,000 live births (Bililign and Mulatu, 2017).

When mothers do not recognize the danger signs in pregnancy, adverse effects can occur to the mother, the unborn baby, or the pregnancy itself. Adverse effects include: Illness or death of the mother, for instance, severe bleeding can lead to anemia or death of the mother, infection to the unborn baby through prematurely ruptured membranes, when amniotic fluid leaks from the vagina. If not attended to, this can lead to fetal or neonatal morbidity and mortality, termination of a pregnancy before term in vaginal bleeding. Maternal hypertension or fever, can lead to increased numbers of neonatal deaths or prematurely born babies who may eventually die due to inadequate facilities to care for them (UNFPA, 2011).

The proportion of women age 15-49 in Ethiopia who received antenatal care (ANC) from a skilled provider is 62% in 2016 (Ethiopia and Macro, 2016). On study conducted in Erer District, Ethiopia Somali region 15.5 % respondents were knowledgeable about obstetric danger signs. Urban residence, women who had been pregnant five or more times and antenatal care utilization were associated with being knowledgeable about obstetric danger signs during pregnancy, childbirth and postpartum (Maseresha et al., 2016).

The national reproductive strategy of Ethiopia has given emphasis to maternal and newborn health so as to reduce the high maternal and neonatal mortality. The strategy focuses on the need to empower women, men, families and communities to recognize pregnancy related risks, and to take responsibility for developing and implementing appropriate response to them. One of the targets in the strategies is to ensure that 80% of all families recognize at least three danger signs associated with pregnancy related complications by 2010 in areas where health extension program is fully implemented(FMOH, 2006).

Despite the fact that emphasis is given by the national strategy to raise knowledge of obstetric danger signs little is known about the current level of knowledge and the influencing factors in Ethiopia Somali regional state (Maseresha et al., 2016). This study therefore aims to fill this gap by assessing the current status of knowledge of danger signs and associated factors among pregnant women in Jigjiga City.

2. Methods and Materials

2.1. Study Area and Period

The study was conducted in Jigjiga city in Eastern Ethiopia which is the capital city of Somali region. Jigjiga city is approximately 80 km east of Harar and 60 km west of the border with Somalia. The city has an elevation of 1,609 meters above sea level. Based on figures from the central statistical agency in 2005 Jigjiga has an estimated total population of 98,076 of whom 50,355 are men and 47,721 are women. Jigjiga town has 20 kebeles. It has also three health center, one regional hospital and one referral hospital. Number of pregnant women received antenatal care at least one 598, proportion of birth attendant by skilled health personnel 55% and number of pregnant mothers 7475 in JCCHO (2017). The study was conducted from February 1-18 / 2018.

2.2. Study design

A community based cross sectional study was conducted.

2.3. Population

The source population was all pregnant mothers who were residing in Jigjiga city. The study populations were all pregnant mother who were living in the selected kebeles of Jigjiga city.

2.4. Inclusion criteria and Exclusion Criteria

All pregnant mother who were residing in Jigjiga more than 6 months while those women who were very ill during data collection were excluded.

2.5. Sample Size Determination

Sample size was determined based on the formula used to estimate single population proportion, assuming 15.5 %, respondents were knowledgeable about obstetric danger signs (Maseresha et al., 2016), and a 5% margin of error with 95% confidence level. The sample size calculated was 201. After adjusting for a non-response rate of 10% and design effect of 2 the final sample size required was 442 mothers. The sample size also calculated by considering factors that were significantly associated with the outcome variables, two sided confidence level of 95%, the margin of error of 5%, power of 80% and the ratio of exposed to unexposed 1:1 using Epi Info Version 7 software. Comparing for the first and second objective, the final sample size was taken 442.

2.6. Sampling Technique

The study participants were selected through multi-stage sampling technique. There were 20 kebeles in Jigjiga city and from these 7 kebeles were selected by simple random sampling techniques. In Jigjiga city there were 7475 pregnant mothers. Seven kebeles consists 2,541 pregnant mothers. The calculated sample sizes of 442 were proportionally

allocated to the selected kebeles. Each study participants were selected using systematic sampling technique. If there was more than one eligible individual in the selected household, a lottery method was used.

2.7. Operational Definitions

Knowledgeable: A pregnant mother at least mentions three of the danger signs which occurring during each period (pregnancy, birth and post-partum) (Bililign and Mulatu, 2017; FMOH, 2006). Gravidity: number of pregnancy a women ever has including the current pregnancy. Model family: It is a household that has adopted 16 priority intervention of the government. Danger signs: Are indications which can threat the life of the mother and/or fetus (Mathai et al., 2003). Obstetrics complication: It is complication occurred at the time of pregnancy, childbirth and postpartum (Maseresha et al., 2016).

2.8. Data collection tools and methods

Data were gathered by seven midwives through face to face interview using semi structured questionnaire. The questionnaire contains socio-demographic characteristics of mothers, obstetric history, current pregnancy, health service utilization and danger signs of pregnancy, childbirth and postpartum.

2.9. Data Quality Control

Data quality was assured through training of data collectors, questionnaire pretesting. Pre-test was done in 5% of the sample size done in 05 kebele which was not the part of the selected kebele) and continuous supervision at the time of data collection. Supervisors together with principal investigator were discussed about the findings of the pretest and questionnaire was modified before the actual data collection. After adjustment of the questions the actual data collection was conducted by using Amharic and Somali version questionnaire. The questionnaire was checked in each day on the actual data collection time for completeness and consistency by supervisors and principal investigator. Code was given for completed questionnaire. Coded questioners were double entered into the computer by the principal investigator.

2.10. Data Processing and Analysis

All filled questioner was checked for completeness and consistency, coding, and double data entry was made using the Epidata 3.1 software. Then the data was exported to the SPSS statistical package version 20 for further analysis. The level of knowledge on key danger signs of obstetric complications during the three periods and other independent variables like socio-demographic and obstetric variables about the study population were described with frequencies, proportion, and summary statistics and presented in text, figure and tables. A pregnant mother knew three obstaterics danger signs which occurring in each period (Pregnancy, childbirth and postpartum) coded as 1 and the rest coded as 0 as an outcome variable. Bivariate analysis was carried out to identify variables that are significantly associated with Knowledge level about danger signs of obstetrics complication. Collinearity was diagnosed using VIF and tolerance and also Hoshmer Lemeshow and Omnibus test was performed to test for model fitness. Those variables in bivariate analysis whose p value less than 0.25 ($p<0.25$) was included in multiple logistic regression. Then multiple logistic regression analysis was performed for those factors that showed a statistically significant association in bivariate analysis and investigate independent predictors by controlling for possible confounders. Finally, variables whose p value less than 0.05 ($p<0.05$) in logistic regression was considered as statistically significant association.

2.11. Ethical Consideration

The study was approved by Haramaya University, College of Health and Medical Sciences Institutional Health Research Ethics Review Committee (IHRERC). Informed, voluntary, written and signed consent was obtained from the respondent after explained the purpose of the study and Individuals was told that they had a right to withdraw from the study at any time. Additionally, names of participants were not use in the study and information obtained from patients hold confidentially. Finally, information will be disseminated to responsible body.

3. Results

3.1. Socio-demographic characteristics of the respondents

Out of 442 mothers, 427 were included in the study, making the response rate of 96.6%. The mean age of the respondents was 27.7 (SD+6.9) years. Ninety-seven (22.7%) of the mothers had formal education. Out of the total mothers, 329 (77.0%) were Muslims by their religion and 295 (69.1) were Somali by ethnicity. Regarding to marital status, four hundred two (94.1%) were married. Almost half of the respondents, 228 (53.4 %) were housewives. Their husbands' mean (±SD) age was 37 (SD±9.1) years, 132 (30.9%) of respondents' husbands attended formal education and 182 (42.6) were private employees. Among respondents, 235 (55.0) had access for mass media which is either radio or television (Table 1).

3.2. Obstetrics related characteristics and health service related factors

Out of 427 mothers, 65 (15.2 %) were pregnant for the first time, 157 (36.8) were pregnant two to four time and 205(48) had been pregnant five or more times. During the current pregnancy, 198 (46.4 %) of respondents had visited health facilities for ANC service. From the total respondents, 193 (45.2 %) reported that they had received health education on maternal health. About 195 (45.7%) of respondents claimed that they could reach health facility within 30 min on foot (Table 2).

Table 1
Socio demographic characteristics of respondents, Jigjiga City, Somali region, Ethiopia, 2018(n=427)

Characteristics		Frequency	%
Age	<20	84	19.7
	20-29	165	38.6
	>=30	178	41.7
Religion	Muslim	329	77
	Orthodox	67	15.7
	Protestant	27	6.3
	Others	4	1
Ethnicity	Somali	295	69.1
	Oromo	26	6.1
	Amhara	71	16.6
	Others	35	8.2
Marital status	Married	402	94.1
	Unmarried	25	5.9
Maternal formal education	Not attend	97	22.7
	Attend	330	77.3
Maternal occupation	House wife	228	53.4
	Employed	199	46.6
Husband age	<25	47	11
	25-50	357	83.6
	>50	23	5.4
Husband formal education	Not attend	295	69.1
	Attend	132	30.9
Husband occupation	Gov.workers	182	42.6
	Prvt. Workers	180	42.2
	Others	65	15.2
Family size	<4	169	39.6
	4-6	101	23.7
	>=7	157	36.8
Access for mass media	Yes	235	55.0
	No	192	45.0

Daily labor, NGO; can read and write, can't read and write; Private employee, Government employee, NGO; Widowed, divorced, cohibitted, Gov governmental, Prvt, private

Table 2
Obstetric characteristics of respondents in, Jigjiga City, Somali region, Ethiopia, 2018(n=427)

Characteristics	Frequency	Percent
Gravidity		
1	65	15.2
2–4	157	36.8
5+	205	48
Gestation age		
First trimester	16	3.7
2nd trimester	270	63.3
3rd trimester	141	33
Model family		
Yes	82	19.2
No	345	80.8
Antenatal care utilization		
Yes	198	46.4
No	229	53.6
Have received maternal health education		
Yes	193	45.2
No	234	54.8
Travel time to health Facility in minute		
<30	195	45.7
>30	232	54.3

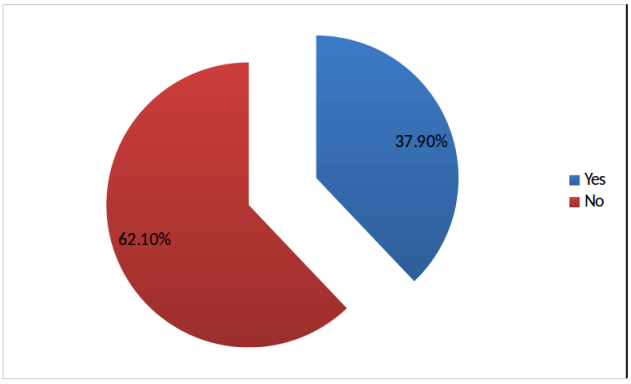

Figure 1: knowledge level of pregnant mothers on obstetrics danger signs during labor, childbirth and post-partum, in Jigjiga City, Somali region, Ethiopia, 2018 (n=427)

3.3. Knowledge on obstetrics danger signs (pregnancy, child birth and postpartum)

Knowledge of a mother about obstetric danger signs indicates, 162 (37.9 %) (95% CI, 33%, 42%) respondents were knowledgeable about obstetric danger signs in all categories (pregnancy, Labor/delivery and postpartum) (Figure 1)

3.4. Knowledge about obstetric danger signs occur during pregnancy

Two hundred twenty-six (52.9%) of the mothers are knowledgeable on danger signs happen during pregnancy. Moreover, the number of pregnant women who reported danger signs during pregnancy were; 282(66%) vaginal bleeding,107(25.1%) convulsion,169(39.6%) severe headache, 115(26.9%) blurred vision,77(18%) severe abdominal pain,38 (8.9%) difficulty of breathing,78(18.3%) fever,106(24.8%) edema on face or leg and; 88(20.6%) no fetal movement (Table 3).

3.5. Knowledge about obstetric danger signs occur during Child birth

One hundred eighty-two (42.6%) of the mothers are knowledgeable on danger signs that can happen during child birth. In addition, 147(34.4%) reported severe headache, 152(35.65) labor more than 12 hours, 121(28.3%) heavy bleeding and, 88(20.6%) high fever, 76(17.8%) retained placenta, 151(35.4%) vaginal bleeding, 65(15.2%) abnormal fetal position as danger signs that might occur during child birth (Table 3).

Table 3
Knowledge of the danger signs on labor, childbirth and post-partum among mothers, In Jigjiga City, Somali region, Ethiopia, 2018(n=427)

Danger signs	Pregnancy Number (%)	Labor/delivery Number (%)	Postpartum Number (%)
Vaginal bleeding	282 (66%)	151 (35.4)	170 (39.8)
Abdominal pain	77 (18)	NA	80 (18.7)
Reduced fetal movement	99 (23.2)	NA	NA
Swelling of hands, faces &legs	106 (24.8)	NA	NA
Blurred vision	115 (26.9)	NA	68 (15.9)
Breathing difficulty	38 (8.9)	NA	53 (12.4)
Severe headache	169 (39.6)	147 (34.4)	NA
Fever	78 (18.3)	88 (20.6)	87 (20.4)
Convulsion	107 (25.1)	NA	97 (22.7)
labor more than 12hr	NA	152 (35.6)	NA
Abnormal fetal position	NA	65 (15.2)	NA
Excessive bleeding	NA	121 (28.3)	NA
Placenta not delivered within $\frac{1}{2}$ hour	NA	76 (17.8)	NA
Foul smelling lochia	NA	NA	58 (13.6)
Loss of consciousness	NA	NA	NA
persistent vomiting	88 (20.6)	NA	NA
breasts swollen red or tender breasts or sore	NA	NA	192 (45)
too weak to get out of bed	NA	NA	94 (22)

3.6. Knowledge about obstetric danger signs occur during postpartum

Two hundred three (47.5%) of the mother are knowledgeable on danger sign occurs after child birth. Hence, mothers who had knowledge on danger signs during postpartum were; 97(22.7%) reported convulsion, 53(12.4%) fast or difficulty of breathing, 87(20.4%) high fever, 94(22%) too Week to get out of bed, 80(18.7) abdominal pain, 192(45%) breast swollen red or tender breast or sore, 58(13.6%) foul smelling lochia and 68(15.9%) blurred vision (Table 3).

3.7. Factors influencing knowledge of mothers on obstetrics danger signs

Crude analysis of socio-demographic, health service and obstetrics related variables through bivariate logistic regression showed age of the mother, maternal education and maternal occupation, husband education and occupation, husband age, access for media, antenatal care utilization and gravidity are significantly associated with knowledge on obstetrics danger signs with P value (<0.05).

A multivariate analysis was performed to identify independent predictors for knowledge on obstetrics danger signs. After controlling for the possible confounder maternal education, husband education, mass media access, gravidity and antenatal care utilization were identified as independent predictor for knowledge on obstetrics danger signs among pregnant mothers in Jigjiga city.

The odds of knowledge on obstetrics danger signs increased among mothers who have formal education (AOR=9.0, 95CI%=4.5-17.8), mothers whose husbands have formal education (AOR=2.0, 95CI%=1.1-3.5), mothers who have mass media access (AOR=7.2, 95CI%=4.0-12.9) and for mothers who have ANC (AOR=4.8, 95CI%=2.8-8.3) than their counter parts.The odds of knowledge on obstetrics danger signs increased 3.0 times among mothers whose gravidity 2-4 (AOR=3.0, 95CI%=1.0-8.8) and 7.2times increase among mothers gravidity>5 (AOR=7.2, 95CI%=4.0-12.9) than primigravida mothers.

4. Discussion

The magnitude of knowledgeable mothers on obstetrics danger signs during pregnancy, childbirth and after child birth was 162 37.9% 95% CI, 33%, 42%.This finding is higher than the study conducted in Uganda that revealed 19% , a study conducted in Chamwino District, Tanzania revealed that 25.2% and study conducted in Erer district Ethiopia revealed that15.5 % were knowledgeable about obstetric danger signs (Kabakyenga et al., 2011; Bintabara et al., 2017; Maseresha et al., 2016). Current study finding is lower than study conducted in Mechekel District and Debaytilatgin District, Ethiopia revealed 55.1% and 56.8% respectively were knowledgeable about danger signs of obstetric complications (Amenu et al., 2016; Dile et al., 2015).

In addition, in this study 52.9 %, 42.6% and 47.5 % of respondents had mentioned at least three danger sign during pregnancy, labor and postnatal period respectively. The finding from the current study was also lower than study conducted in Raya kobo which revealed that about 46.7%, 27.8%, and 26.4% of the mothers were knowledgeable about obstetric danger signs during pregnancy, delivery, and postpartum period, respectively (Bililign and Mulatu, 2017). Furthermore, similar with a community based cross-sectional study was conducted in Goba district, Ethiopia that showed 31.9%, 27% and 22.1% of study participants knew at least three key danger signs during pregnancy, delivery and postpartum period, respectively (Bogale and Markos, 2015).

Table 4
Multivariate logistic regression analysis on factors associated with knowledge on obstetrics danger signs among pregnant mothers in Jigjiga city, Eastern part of Ethiopia,2018

Characteristics		Knowledge about obstetrics danger signs		COR(95% CI)	AOR(95% CI)
		Good	Bad		
Maternal formal education	Not attend**	88	242	1	
	Attend	74	23	8.8(5.2-15.0)	9.0(4.5-17.8)
Husband formal education	Not attend**	87	208	1	1
	Attend	75	57	3.1(2.1-4.8)	2.0(1.1-3.5)
Husband age	<25	7	40	1	1
	25-50	146	211	4.0(1.7-9.1)	0.4(0.06-2.4)
	>50	9	14	3.7(1.2-11.7)	1.1(0.3-0.7)
Family size	<4	46	123	1	1
	4-6	41	60	1.8(1.1-3.1)	0.9(0.4-2.3)
	>=7	75	82	2.5(1.5-3.9)	0.6(0.2-1.9)
Religion	Muslim	133	196	1.6(0.99-2.6)	0.3(0.1-2.4)
	Christian	29	69	1	1
Mass media access	Yes	128	107	5.6(3.5-8.7)	7.2(4.0-12.9)
	No	34	158	1	1
Gravidity	1	13	52	1	1
	2–4	48	109	1.8(0.9-3.5)	3.0(1.0-8.8)
	5+	101	104	3.9(2.0-7.6)	7.2(4.0-12.9)
Antenatal care utilization	Yes	114	84	5.1(3.4-7.8)	4.8(2.8-8.3)
	No	48	181	1	1

*Orthodox, protestant, catholic;** can read and write, can not read and write*

The possible reasons for difference may be due maternal health service quality.

In the current study, the odds of knowledge on obstetrics danger signs increases 9 times more among mothers who have formal education than their counter parts. This finding is in congruent with other studies conducted in different part of the country (Amenu et al., 2016; Dile et al., 2015; Hibstu and Siyoum, 2017).This might be explained by the fact that there is no question that educated women can have better information and care for themselves. Education provides better health knowledge, improves the effectiveness of health behavior and enables to take prompt measures when the danger signs arise.

The odds of knowledgeable mothers on obstetrics danger signs increase 2 times when her husband has formal education than those who have no formal education. This finding is in agreement with the other study reported that, husband educational level increases women's knowledge on danger signs of obstetric complications(Amenu et al., 2016). This might be explained that when husband's level of education increases his understanding towards obstetrics danger signs will also increases and he might share this knowledge to his wife.

The odds of having good knowledge about obstetric danger signs among multi gravida mothers were 7.9 times higher compared from primigravida mothers. This finding is similar with study conducted in different part of Ethiopia (Amenu et al., 2016; Dile et al., 2015; Maseresha et al., 2016). The possible reason might be women' knowledge on obstetrics danger signs escalate when they are exposed to a number of pregnancy and had also exposed repeatedly to health care provider's information.

This study showed that mothers who had antenatal care were 4.8 times knowledgeable on obstetrics danger signs than mothers who had no ANC. This finding is in agreement with the research findings that indicated those mothers who attend ANC knew obstetric danger signs during pregnancy and child birth (Bogale and Markos, 2015; Amenu et al., 2016; Maseresha et al., 2016). In contrast, lack of antenatal care were found to be significantly associated with knowledge on danger signs during pregnancy, labor and post-partum (Dile et al., 2015) The possible reason for positive association between antenatal care and knowledge on obstetrics danger signs may be as a result of health care provider's repeated information dissemination at the time of antenatal care about birth preparation and complication readiness which it in turn leads to increase their knowledge about obstetrics danger signs.

In this study the odds of knowledgeable mothers on obstetrics danger signs were 7.2 times higher among mothers who have mass media exposure compared from counterpart. This maybe as a result of health information dissemination program exposures related to pregnancy and child birth via newspaper television and radio. Similarly on other study in Tsegedie district, Ethiopia functional radio were found to be independent predictors of knowledge of women about danger signs of pregnancy and childbirth (Hailu and Berhe, 2014).

5. Conclusion

This study indicated that large proportion of pregnant women who do not have the knowledge about obstetric danger signs. ANC follow up, gravidity, access for mass

media, maternal, and husband educations were significant factors for knowledge about obstetric danger signs occurring during pregnancy and child birth. Somali regional health bureau has to focus advocacy on complication readiness plan to identify obstetrics danger signs has to promote antenatal care and also provide information via mass media about obstetrics danger signs. Health care providers have to provide information on obstetrics danger signs at ANC and postnatal care and further study is needed to assess knowledge on obstetrics danger signs and its maternal mortality.

Acknowledgments

First, we would like to express our gratefulness to Haramaya University, College of Health and Medical Science, School of graduate studies for funding this research. We would like to thank advisors and supervisors for their guidance and support. Our great appreciation goes to Nuria Tahir, Sofiya Hassen, Helen Abeba and Alem Tadese for their active role during data collection. Last but not least I would like to appreciate study participates.

Conflict of Interest:

The authors declare that they have no competing interests

Authors Contribution:

SH was involved in conceiving, designing and implementing study, designing of the questionnaire, data collection, statistical analysis and manuscript drafting. SH were taking part in statistical analysis and manuscript preparation. LM, ZS, DI, EL, AD, YA was involved in statistical analysis and revision of the manuscript.

List of Abbreviation

AOR : Adjusted Odds Ratio
ANC : Antenatal Care
COR : Crude Odds Ratio
CI : Confidence Interval
FMOH : Federal Ministry of Health
MMR : Maternal Mortality Rate
NGO : Non-Governmental Organization
SDGs : Sustainable Development Goals
SD : Standard Deviation
SPSS : Statistical Package for the Social Sciences
UN : United Nations
WHO : World Health Organization

References

Amenu, G., Mulaw, Z., Seyoum, T., Bayu, H., 2016. Knowledge about danger signs of obstetric complications and associated factors among postnatal mothers of mechekel district health centers, east gojjam zone, northwest ethiopia, 2014. Scientifica 2016.

Bililign, N., Mulatu, T., 2017. Knowledge of obstetric danger signs and associated factors among reproductive age women in raya kobo district of ethiopia: A community based cross-sectional study. BMC pregnancy and childbirth 17, 1–7.

Bintabara, D., Mpembeni, R.N., Mohamed, A.A., 2017. Knowledge of obstetric danger signs among recently-delivered women in chamwino district, tanzania: a cross-sectional study. BMC pregnancy and childbirth 17, 1–10.

Bogale, D., Markos, D., 2015. Knowledge of obstetric danger signs among child bearing age women in goba district, ethiopia: a cross-sectional study. BMC pregnancy and childbirth 15, 1–8.

Dile, M., Taddesse, D., Gedefaw, M., Asmama, T., 2015. Knowledge of obstetric danger signs and its associated factors in debaytilatgin district, ethiopia: a community based cross sectional study. Gynecol Obstet (Sunnyvale) 5, 315.

El-Nagar, A.E., Ahmed, M.H., Belal, G., 2017. Knowledge and practices of pregnant women regarding danger signs of obstetric complications. IOSR Journal of Nursing and Health Science 6, 30–41.

Ethiopia, C.S.A., Macro, O., 2016. Ethiopia demographic and health survey. Addis Ababa: Central Statistical Agency .

FMOH, 2006. Ministry of Health. National Reproductive Strategy, 2006-2015. Addis Ababa, Ethiopia:. Ministry of Health. Ethiopia: 16-21.

Hailu, D., Berhe, H., 2014. Knowledge about obstetric danger signs and associated factors among mothers in tsegedie district, tigray region, ethiopia 2013: community based cross-sectional study. Plos one 9, e83459.

Hibstu, D.T., Siyoum, Y.D., 2017. Knowledge of obstetric danger signs and associated factors among pregnant women attending antenatal care at health facilities of yirgacheffe town, gedeo zone, southern ethiopia. Archives of Public Health 75, 1–9.

JCCHO, 2017. Jigjiga City Councel Health office report. Jigjiga City Councel Health office.

Kabakyenga, J.K., stergren, P.O., Turyakira, E., Pettersson, K.O., 2011. Knowledge of obstetric danger signs and birth preparedness practices among women in rural uganda. Reproductive health 8, 1–10.

Maseresha, N., Woldemichael, K., Dube, L., 2016. Knowledge of obstetric danger signs and associated factors among pregnant women in erer district, somali region, ethiopia. BMC women's health 16, 1–8.

Mathai, M., Sanghvi, H., Guidotti, R.J., 2003. Managing complications in pregnancy and childbirth: a guide for midwives and doctors. World Health Organization.

Ossai, E., Uzochukwu, B., 2015. Knowledge of danger signs of pregnancy among clients of maternal health service in urban and rural primary health centres of southeast nigeria. J Community Med Health Educ 5, 2161–0711.

Rashad, W.A., Essa, R.M., 2010. Women's awareness of danger signs of obstetrics complications. Journal of American Science 6, 1299–1306.

UNFPA, 2011. Safe Motherhood Stepping up Efforts to Save Mothers Lives. UNFPA.

WHO, 2005. Make every mother and child count. switzerland: World health organization. available:. http://www.who.int/Whr/2005/Whr2005_en.pdf.