



**SAINT PAUL'S HOSPITAL MELLINIUM MEDICAL COLLEGE,  
DEPARTMENT OF PUBLIC HEALTH**

**Awareness Of Obstetric Danger Signs And Associated Factors  
Among Pregnant Women In Public Health Institutions, In Jigjiga  
Town Somali Region, Ethiopia, 2017**

**BY Abdi Osman Kawden (Intern)**

**A STUDENT RESEARCH PAPER TO BE SUMBMITED TO THE  
DEPARTMENT OF PUBLIC HEALTH, SPHMMC, IN PARTIAL  
FULFILMENTS OF THE REQUAIRMENTS FOR THE DEGREE OF  
DOCTOR OF MEDICINE**

**August, 2017**

**ADDIS ABABA**



**SAINT PAUL'S HOSPITAL MELLINIUM MEDICAL COLLEDGE,  
DEPARTMENT OF PUBLIC HEALTH**

**Awareness Of Obstetric Danger Signs And Associated Factors  
Among Pregnant Women In Public Health Institutions, In Jigjiga  
Town Somali Region, Ethiopia, 2017**

**ADVISORS: MR. ANDAMLAK GIZAW (BSc, MPH)**

**DR. DELAYEHU B. (MD, OBSTETRICIAN/GYNECOLOGIST)**

**A STUDENT RESEARCH PAPER TO BE SUMBMITED TO THE  
DEPARTMENT OF PUBLICH HEALTH, SPHMMC, IN PARTIAL  
FULFILMENTS OF THE REQUAIRMENTS FOR THE DEGREE OF  
DOCTOR OF MEDICINE**

**August, 2017**

**ADDIS ABABA**

## ACKNOWLEDGEMENT

I would like to express my heart-felt thanks to my Parents, my dear father and mom whom without them I could not be anything

Then thanks to my advisors Mr. Andamlak Gizaw and Dr.delayehu B. for their constructive comments and continuous guidance they provided me though out the development of this research paper.

## Abstract

**Introduction:** Globally, the maternal mortality ratio was estimated to be 216 per 100,000 live births in 2015. This translates that there are around 830 women dying every day due to pregnancy complications and child birth. World Health Organization (WHO) African regions bore almost two thirds of global maternal deaths. Direct obstetrical deaths have six major causes: hypertensive diseases of pregnancy, hemorrhage, infections/ sepsis, thromboembolism, and, in developing countries, obstructed labor and complications from illegal abortion. Lack of awareness on the symptoms of obstetric complication is one of the reasons of failure of women to identify and seek appropriate emergency care.

**Objective of the study** was intended to evaluate the level awareness of obstetric danger signs and associated factors among pregnant women in public health institutions, jigjiga town, Somali region, Ethiopia.

**Method:** institutional based cross-sectional study was conducted between April 15 to 30, 2017. A total of 357 pregnant women selected using Stratified random sampling method was included in the study. The respondents were interviewed from two hospitals and one health centers by using pretested structured questionnaire. Descriptive analysis was computed and Chi-square test was used to measure the association of dependent and independent variables, whereas, 95% confidence interval and P-value less than 0.05 were considered statistically significant association between variables.

**Result:** out of 357 pregnant women participated in the study, 126 (35.3%) were in the age group 20-24 years, 117 (32.8%) were in the age range 25 – 29 years and only 29 (8.1%) were above 35 years. Almost all study participants, 354 (99.2%) were married. Regarding religion, majority, 347 (97.2%) of them were Muslims. Majority, 355 (99.4%) of the participants come from urban area. Regarding level education of

the clients, 159 (44.6%) of the clients were illiterate whereas only 34(9.3%) of the clients have educational level of secondary school or attended in college. In addition to this, 158 (44.25%), 173 (48.74%), 25 (7%) of the clients had one or no child, 2-4 children or more than 4 children respectively. Of the respondents, 43% did not have antenatal care (ANC) follow up in last pregnancy. Regarding awareness towards obstetric danger signs, 225 (63%) knew one or more obstetric danger signs whereas 132 (38.1%) did not heard any obstetric danger signs. The study shows significant association between awareness of obstetric danger signs with age ( $X^2 = 68.120$ ,  $p < 0.001$ ), occupation ( $X^2 = 25.073$ ,  $p = 0.002$ ), parity ( $X^2 = 70.513$ ,  $p < 0.001$ ), number of ANC flow up during last pregnancy ( $X^2 = 12.063$ ,  $p = 0.0017$ ).

**Conclusion and Recommendation:** study indicated low awareness of obstetric danger in significant proportion of the respondents and some of the key danger signs of pregnancy were rarely mentioned or familiar to the pregnant women attending Jigjiga public health institution. association between level of awareness of obstetric danger signs and age, gravidity, number of last pregnancy ANC visits but no association between the level of awareness danger signs and educational status of the respondents. This seems that women learn more about experiences related to pregnancy outcomes. Therefore, strategic plan is required to increase awareness of pregnant women, families and community members towards obstetric danger signs. Health care providers should have more active role in educating and advising about these dangers sign.

## Contents

ACKNOWLEDGEMENT .....	I
Abstract.....	iii
Contents.....	v
list of tables.....	vii
List of figures.....	viii
ACRONYMS AND ABBREVIATIONS .....	ix
1.Introduction .....	- 1 -
1.2. Background .....	- 1 -
1.3. Statement of the problem .....	- 2 -
1.4Justification of the study.....	- 4 -
2.Literature review.....	- 1 -
3. OBJECTIVE .....	- 5 -
3.1. General objective .....	- 5 -
3.2. Specific objectives.....	- 5 -
4. METHODS AND MATERIALS .....	- 6 -
4.1. Study area and period.....	- 6 -
4.1. Study period .....	- 6 -
4.2. Study design.....	- 6 -
4.3. Source population.....	- 6 -
4.4. Study population.....	- 6 -
4.4.1. Inclusion criteria.....	- 6 -
4.4.2. Exclusion criteria .....	<b>Error! Bookmark not defined.</b>
4.5. Sample size determination .....	- 7 -
4.6. Sampling procedure .....	- 8 -
4.7. Data collection procedure.....	- 8 -
4.9. Data quality assurance.....	- 8 -
4.10. Data processing, analysis and Interpretation .....	- 9 -
4.11. Study variables.....	- 9 -
4.11.1. Dependent variable: .....	- 9 -
4.11.2. Independent variable:.....	- 9 -
4.12. Operational definitions .....	- 10 -
4.13. Ethical clearance .....	- 10 -

4.14. Plan for dissemination and Utilization of results .....	- 10 -
5. Result .....	- 11 -
6. Discussion.....	- 23 -
7. CONCLUSION.....	- 25 -
8. RECOMMENDATION .....	- 26 -
9. Limitation of the study.....	- 27 -
10. References .....	- 28 -

## LIST OF TABLES

**Table 1:** Socio-demographic characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Table 2:** Obstetric characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Table 3:** Awareness of clients about obstetric danger signs during pregnancy, labor and postpartum in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Table 4:** Distribution of the clients according to their Level of awareness of obstetric danger signs in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Table 5:** Distribution of the clients according to their level of awareness of obstetric danger signs in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Table 6:** Association between level of awareness of obstetric danger signs and obstetric characteristics in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

## LIST OF FIGURES

**Figure 1:** distribution of pregnant mothers according to their occupation in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Figure 2:** distribution of pregnant mothers according to their level of education in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**figure 3.** Awareness of clients about obstetric danger signs during pregnancy, labor and postpartum in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**Figure 4:** Distribution of the clients according to number of obstetric danger signs they mentioned in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

## ACRONYMS AND ABBREVIATIONS

AIDS-----Acquired Immune Deficiency Syndrome

ANC-----Antenatal Care

MCH-----maternal and child health.

MDG -----Millennium Development Goal

RCHC-----Reproductive and Child Health Clinic

SPSS-----Statistical Package for Social Scientist

TB-----Traditional Birth Attendant

WHO-----World Health Organization

## 1.Introduction

### 1.2. Background

Over 200 million pregnancies occur in the world each year and one of the greatest challenges to both the obstetrician and surgeon is the care of the pregnant patient because physiologic changes during pregnancy alter classic complaints, presentations, and treatments and outcomes of disease management affect two patients, both the mother and fetus [1].

Globally, the maternal mortality ratio was estimated to be 216 per 100,000 live births in 2015[2]. This translates that there are around 830 women dying every day due to pregnancy complications and child birth [2]. World Health Organization (WHO) African regions bore almost two thirds of global maternal deaths and major causes of direct obstetrical deaths are hypertensive diseases of pregnancy, hemorrhage, infections/ sepsis, thromboembolism, and, in developing countries, obstructed labor and complications from illegal abortion[1, 2 ]. Lack of awareness on the symptoms of obstetric complication is one of the reasons of failure of women to identify and seek appropriate emergency care[2]. Danger signs of pregnancies are a warning signs that women encounter during pregnancy, child birth and postpartum [4]. The most common danger signs during pregnancy that can increase the risk of maternal deaths are: vaginal bleeding, severe lower abdominal pain, convulsions/fits, high fever, severe headaches, blurred vision, absence of fetal movements, heavy bleeding during or after labour and labour lasting more than 12hrs, hands, feet, and face appear first and retained placenta [4].

### 1.3. Statement of the problem

Pregnancy is a normal process that results in a series of both physiological and psychological changes in expectant mothers [5]. However, normal pregnancy may be accompanied complications which are potentially life threatening to the mother and / or the fetus [5]. The leading causes of maternal mortality in pregnant women are hemorrhage, hypertensive disorders, infection, obstructed labor, and complications from unsafe abortions [5].

In Ethiopia, the levels of maternal mortality and morbidity are among the highest in the world and the current estimate of maternal mortality rate is 412 per 100, 000 live births according to EDHS in 2016 [6]. Most maternal deaths are avoidable as the health care solutions to prevent or manage the complications are well known. This includes well-functioning health system that provides accessible and high quality care from household to hospital level including availability of free, accessible family planning, skilled birth attendants, periodic measurement of blood pressure and resources for emergency obstetrical care that reduces intrapartum and postpartum maternal mortality potentially [7].

Awareness about the significance of symptoms and signs of obstetrics complications may lead to timely access to appropriate emergency obstetric care [7]. Key danger signs during labor and childbirth include severe vaginal bleeding, prolonged labor, convulsions, and retained placenta. Danger signs during the postpartum period include severe bleeding following childbirth, fits and comma after childbirth, and fever[7, 19].

National health strategy of Ethiopia has given emphasis to maternal and newborn health so as to reduce the high maternal and neonatal mortality [6, 24]. 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[6, 24].

The level of awareness and its associated factors of obstetric danger sign among pregnant women is not well known in Ethiopia at national level and researches done some specific areas like Aleto wondo In Sidama Zone and Goba district shown low level of awareness towards obstetric danger signs despite the fact that emphasis is given by the national strategy to raise awareness of `obstetric danger signs [6, 13, 17, 24]. This study therefore may fill some of the remaining gaps by assessing the current status of awareness of danger signs and its associated factors among pregnant women in jigjiga city, Somali region, Ethiopia.

#### 1.4 Justification of the study

Women die from a wide range of complications in pregnancy, childbirth or after delivery. These life threatening complications are treatable, and thus most of these deaths are avoidable if women with the complications are able to identify and seek timely and appropriate emergency obstetrical care. The information obtained from this study will give an insight on the knowledge of danger signs during pregnancy and if it correlates with appropriate health seeking behavior after recognizing a danger sign. In case the study would identify low knowledge and inappropriate health seeking actions in relation to danger signs during pregnancy, then training materials and posters that emphasize information about danger signs will be developed. Furthermore, health care professionals may be trained to provide health education within the community about danger signs of pregnancy and the importance of attending to a health facility early enough to prevent severity of the problem. This will help in the efforts of reducing maternal and child morbidities and mortalities and thereafter reduction of maternal mortality ratio in the country.

## 2.Literature review

The global maternal deaths ratio fell by 44% between 1990 And 2015 and the number of maternal death around the world dropped from about 532000 in 1990 to 303000 in 2015. This estimates maternal mortality ratio of 216 per 100,000 down from 385 in 1990 [8]. In sub-Saharan Africa, it is estimated that 162,000 (56%) maternal deaths occur [8]. Raising awareness of pregnant women on the danger signs would improve early detection of problems and reduces the delay in deciding to seek obstetric care[8].

The level of awareness of obstetric danger signs show widely varied in different regions of the world. A study was done in primary health centers in Enugu state, Nigeria, in 2015, to assess knowledge of key danger signs of pregnancy among clients of maternal health service in urban and rural primary health centers of southeast Nigeria. The most recalled danger sign by the clients was bleeding before labour, (urban, 47.4%; rural, 62.6%), while the least recalled sign was swollen hands and feet, (urban, 16.7%; rural, 24.4%). A significantly higher proportion of clients in rural, had good knowledge of danger signs by recalling four or more signs when compared to urban. Predictors of good knowledge included being urban client, maternal age less than 30, being single, primary education, and low socio-economic status[9].

Another exploratory descriptive study was conducted at two Maternal and Child Health Centers (MCH) in Egypt in 2010 and revealed that slightly more than one quarter of the study subjects (26.5 %) were unaware of obstetric danger signs compared to almost the same proportion (26.0 %) that had good awareness about such signs, while 47.5 % of the study subjects exhibited fair awareness. Lack of awareness about obstetric danger signs was related younger age, low level of

education, gravidity and parity, previous experiences with any obstetric complications and lack of antenatal care[10].

Another study which was done in the north region of Jordan on 340 pregnant women between March and June 2011 showed a good degree of awareness about normal signs associated with pregnancy, and to a less extent about abnormal signs. The commonest signs mentioned by the studied group during their pregnancy were nausea and vomiting, fatigue, back pain, heartburn and vaginal discharge[11].

Another study which was done among women in Tanzania, in 2013, to assess knowledge of danger signs during pregnancy and subsequent health seeking actions among women. Knowledge of danger signs was low (31%); commonly mentioned danger signs were vaginal bleeding (81.2%), swelling of fingers, face and legs (46.3%) and severe headache with blurred vision (43.6%). In bivariate analysis, age, education and occupation were associated with knowledge on danger signs during pregnancy. In multivariate logistic regression, age and occupation were statistically significant associated with knowledge on danger signs. Having older age was eight times more likely to have knowledge on danger signs compared to young ones ( $\leq 20$  years); self-employed women were two times more likely to have knowledge on danger signs compared to being employed [12].

Another study done among women of child bearing age at Goba district of Ethiopia, in 2015, showed that about 31.9%, 27%, and 22.1% of study participants knew at least three key danger signs during pregnancy, delivery and postpartum period, respectively. As compared to women who did not attend Anti Natal Care service during their pregnancy, those who attend ANC were 2.56 times and 2.54 times more likely to know obstetric danger signs during pregnancy and child birth. This study showed low level of knowledge of obstetric danger signs during pregnancy, child

birth and postpartum period. ANC follow up was a significant factor for knowledge about obstetric danger signs occurring during pregnancy and child birth[13].

Another study was done on ANC Attendant Pregnant Women in Debarq Town, North West Ethiopia, in 2012, showed that 53% of the respondents have poor awareness during pregnancy whereas, 54.3% of pregnant women have poor awareness during labor. The percentage of women who knew at least three or more danger signs during pregnancy and during delivery was 47% and 45.7% respectively. This study concluded that mother's awareness on danger signs of pregnancy was poor and affected by educational status and the occupation[14].

Another study was done to assess awareness of danger signs of obstetric complications among pregnant women attending antenatal care in east wollega, Ethiopia, in 2015. About 26.04% of the respondents were not aware of any danger signs of obstetric complications, 52.86% of the respondents were unaware of danger signs that could arise during pregnancy, 38.28% were unaware of danger signs that could arise during delivery, 43.00% were unaware of danger signs that could arise after birth. The study also showed that, only 28.38% of the respondents indicated vaginal bleeding during pregnancy as a danger sign of obstetric complications, only 38.28% of the respondents mentioned vaginal bleeding as a danger sign of obstetric complications, only 29.17% of the respondents were aware of prolonged labour as a danger sign of obstetric complications whereas Only 42.97% of the respondents indicated severe vaginal bleeding as a danger sign of obstetric complications during the postpartum period. The study revealed that the respondents' occupation, number of pregnancy, number of ANC visits made were strongly associated with awareness of danger signs of obstetric complications. In this study, the respondents' educational level did not seem to play a role in increasing awareness of danger signs

of obstetric complications. The absence of association between awareness of danger signs of obstetric complications and education was of concern[15].

Another cross-sectional study was done in Mekelle city to assess awareness of Obstetric Danger Signs and its associated Factors among Pregnant Women in Public Health Institutions in Mekelle City of Ethiopia December 2013 to June 2014. The associated factors of awareness towards obstetric danger sign were age, number of pregnancies, Partner educational status and occupation. The study revealed that the level of awareness of obstetric danger signs among women who attend ANC in selected health institutions found in Mekelle city was 82.5%. The finding of this study has also indicated that severe bleeding, swell of face or arm and feet, lower abdominal pain, prolonged labor were the commonest signs recognized by the clients as danger signs of pregnancy; 69.8%, 35.7%, 83% and 38.7% respectively. The determinant factors of awareness on obstetric danger signs were being urban residence, number of antenatal visits and when the mother had been informed of having a risk factors or complication during antenatal care respectively[16].

Another study was done in Aleta Wondo district, Sidama Zone, South Ethiopia, in 2007, to assess pregnant women's knowledge about obstetric danger signs. In this study, 226 (30.4%), 305(41.3%) and 279(37.7%) knew at least two danger signs during pregnancy, childbirth and postpartum period, respectively. Being urban resident was consistently found to be strongly associated with mentioning at least two danger signs of pregnancy, child birth, and postpartum period. This study concludes that the knowledge level of pregnant women about obstetric danger signs (during pregnancy, childbirth and postpartum period) was low and affected by residential area[17].

### 3. OBJECTIVE

#### 3.1. General objective

- To assess awareness of obstetric danger signs during Pregnancy and associated factors among pregnant mothers in public health institutions in Jigjiga town, Somali region, Ethiopia, 2017.

#### 3.2. Specific objectives

- To assess mothers level of awareness on danger signs during pregnancy, labor and postpartum
- To assess the association between socio-demographic characteristics of Study participants and awareness obstetric danger signs during pregnancy, labor and postpartum

## 4. METHODS AND MATERIALS

### 4.1. Study area

The study was conducted in public health institutions in Jigjiga town. Jigjiga is capital city of Somali regional state of Ethiopia which located 625km east of Addis Ababa and 105km east HARAR. Its total population is 159,300 whom 51.02% and 49.88% men and women respectively. The dominant ethnic group living in the town is Somali (99.0%), the next 3 largest groups were the Amhara (0.25%), the Oromo (0.44%), and the Garage (0.30%); all other ethnic groups made up 0.08% of the population. This city is the largest settlement in Jigjiga woreda. Jigjiga city has one referral hospital, one generalized hospitals, one primary hospital, and two health centers [21]

### 4.1. Study period

The study was conducted from April 15 to 30, 2017

### 4.2. Study design

Institutional based cross-sectional study design was used

### 4.3. Source population

All pregnant women attending ANC follow up at jigjiga public health institutions

### 4.4. Study population

Randomly selected pregnant women attending ANC follow up at jigjiga public health institutions

#### 4.4.1. Inclusion criteria

Mothers who mentally and physically capable of participating this study.

#### 4.5. Sample size determination

- Sample Size was computed based on single population proportion formula.
- A research conducted in Aleta Wondo, Sidama Zone of Ethiopia on awareness about obstetric danger sign among pregnant women where population proportion (p= 30.4%).

Then by using formula to calculate the sample size

$$n = (z_{\alpha/2})^2 p (1-p) / D^2,$$

n=number of the study subjects

Z= the standardized normal distribution curve value for the 95% confidence interval (1.96)

P= P is population proportion; (p = 30.4%)

d=the desired precision of the estimate (the margin of error between the sample and population, 5%)

therefore:

$$n = (1.96)^2 \times 0.304(1-0.304) / (0.05)^2$$

$$n=325$$

Then adding 10 % non-response rate (10% of 325)

The total sample size will be 357

#### 4.6. Sampling procedure

The study was conducted 3 out of 5 public health institutions in jigjiga city (i.e. Meles zenawi referral Hospital, Karamara generalized hospital, and Ablele health center). The calculated sample size was proportionally allocated to different health institutions. Stratified random sampling was used for study subjects

#### 4.7. Data collection procedure

Four nursing degree students was recruited as data collectors. All data collectors were oriented for 2 days on data collection process to clarify how to interview and fill the questionnaire. They are first allowed to fill some questionnaires and later discussion was made in all contents of the format and areas of difficulties, was revised.

#### 4.9. Data quality assurance

Questionnaire was prepared in English version and translated in to local language (Somali) and back to English. Before the initiation of the main study pre-test was carried out on 5% of the calculated sample size in in other public health institutions to check understandability, clarity and completeness of the questionnaire. Based on the finding of the pre-test the questionnaire was modified. Data collection was carried out by trained nursing students in jigjiga health science college. Ten percent of the collected data was checked by the supervisor daily for completeness. To control the quality of the data processing, the data was checked for its completeness before data entry and the cleaning process was done by running simple frequency after data entry for its consistency. The inconsistent data was checked by referring the hard copy of the questionnaire.

#### 4.10. Data processing, analysis and Interpretation

After data collection, each questionnaire was checked for its completeness. Data entry, cleaning and coding was done by Epi Info version 3.5.4 statistical software package & exported to SPSS window version 20 for analysis. Tables, bar graphs, pie charts and cross tabulations was used to present the data. The association between variable was described by using chi square and p-values.

#### 4.11. Study variables

##### 4.11.1. Dependent variable:

###### ❖ **Awareness of different obstetric danger signs**

##### 4.11.2. Independent variable:

###### ❖ Socioeconomic and demographic factors:

- Age
- Marital status
- Religion
- Ethnicity
- Educational status
- Occupation

###### ❖ **Obstetric factors**

- Parity
- Gravidity
- Gestational age
- ANC follow up
- Sources of information about obstetric danger signs

#### 4.12. Operational definitions

**Parity:** the number of pregnancies carried to viable gestational age [22]

**Gravidity:** the number of times a woman has been pregnant [22]

**Retained placenta:** placenta that is not expelled within 30 minutes of the baby's birth (23)

**Awareness:** awareness of obstetric danger signs means the basic information that the mothers have regarding obstetric danger signs.

**Good awareness:** refers to those participants who respond correctly three or more major obstetric danger signs

**Fair knowledge:** refers to those participants who responds correctly 1-2 danger signs

**Poor knowledge:** refers to those participants who did not respond correctly any of the key obstetric danger signs

#### 4.13. Ethical clearance

Written permission letter was obtained from SPHMMC to Somali regional health Bureau and jigjiga public health institutions. Then oral, informed consent was obtained from each study participant. Privacy of respondents and confidentiality of information were kept throughout the study.

#### 4.14. Plan for dissemination and Utilization of results

The result will be presented for the fulfillment of degree in medicine. Soft copy and hard copy will be submitted to the department. Efforts will be done to publish the findings of the study and disseminated through different journals and scientific publications.

## 5. Result

### 5.1. Socio-demographic characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

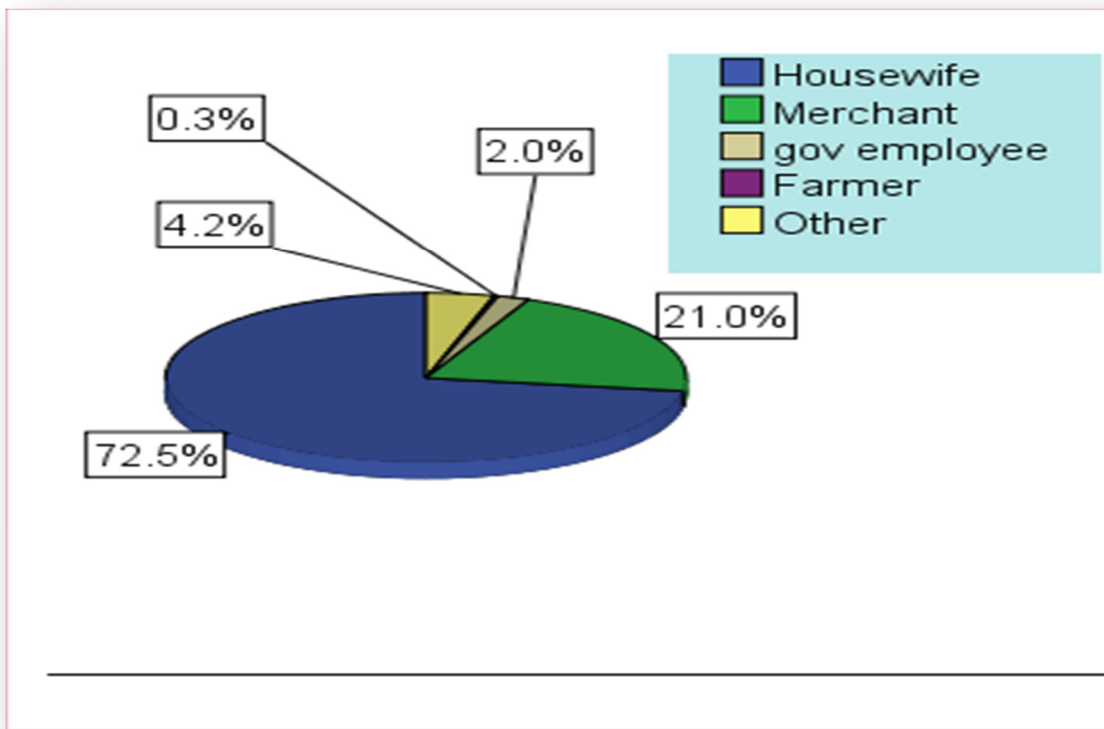
From the selected three health institutions, a total of 357 pregnant women participated in the study, giving response rate of 100%. The mean age of the clients was 26.65 ( $\pm 4.96$  SD) and 14 (3.95%) were less than 20 years of age and 29 (8.1%) were above 34 years of age. In addition to this about 99.2% of the clients were married. The distribution of other sociodemographic characteristics was shown in table 1.

**Table 1: Socio-demographic characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

Age	Frequency	Percentage
< 20	14	3.95
20 - 24	126	35.3
25- 29	117	32.8
30 - 34	71	19.9
> 34	29	8.1.0
<b>Marital status</b>		
Single	1	0.3
married	354	99.2
Other	2	0.6
<b>Religion</b>		
Muslim	347	97.2
Orthodox	8	2.3
Protestant	2	.6
<b>Ethnicity</b>		
Somali	324	90.7
Oromo	21	5.9
Amhara	7	2
Other	5	1.4
<b>Place of residency</b>		
Urban	355	99.4
Rural	2	.6

## 5.2 Distribution of pregnant mothers according to their occupation in jigjiga city public health institutions, Ethiopia, September 2016 to august 2017

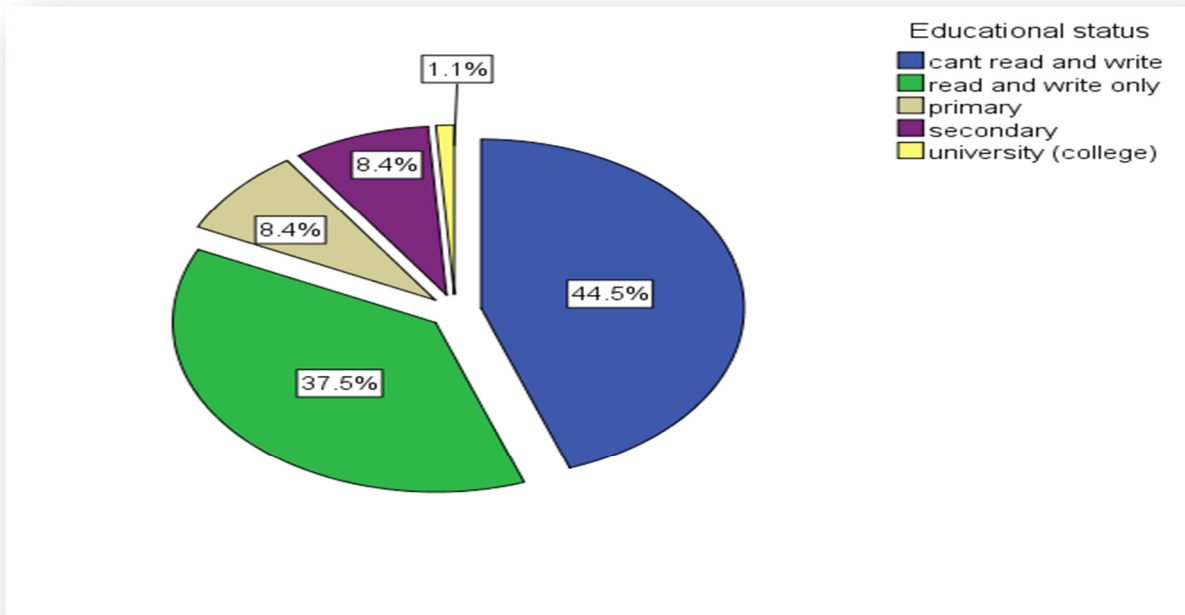
Regarding the occupation of the pregnant mothers attending jigjiga public health institutions, 259 (72.5%) were housewife whereas 7(2%) of them were government employee as shown in the flowing chart farmers and other jobs respectively.



**Figure 1: distribution of pregnant mothers according to their occupation in jigjiga city public health institutions, Ethiopia, February 30 to march 15.2017**

### 5.3 distribution of pregnant mothers according to their level of education in jigjiga city public health institutions, Ethiopia, September 2016 to august 2017

Regarding level education of the clients, 159(44.6%) of study participants cant read or write whereas 34(9.5%) of the clients have educational level of secondary school and or attended college.



**Figure 2:** distribution of pregnant mothers according to their level of education in jigjiga city public health institutions, Ethiopia, September 2016 to august 2017

#### 5.4. Obstetric characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

In this study, 66 (18.5%) of the clients were prima gravida (1st pregnancy) whereas 77 (21.5%) had more than 4 pregnancies. Regarding ANC of the of those who are multigravida, 162 (57%) had ANC flow up in last pregnancy and rest 122 (43%) had no ANC flow up. In those who had ANC follow up, 76.5% of them had less than 4 visits. Regarding their first ANC follow up, majority, 239 (66.95%) of the clients started first ANC follow up in their 2<sup>nd</sup> trimester whereas 30(8.4%) of them started their ANC flow up in 3<sup>rd</sup> trimester or beyond. Among respondents, 164 (57.77 %) ,120 (42.25%) deliver home and health institution respectively in their previous pregnancy. In addition to this, 32 (11.27%) of them had danger signs during last pregnancy as shown in table 2.

**Table 2. Obstetric characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

Current pregnancy			Last pregnancy		
Variables	Number	Percent	Variables	number	Percent
<b>Current gestational age</b>			<b>Had ANC in last pregnancy</b>		
1 <sup>st</sup> trimester	53	14.80	YES	162	57.00
2 <sup>nd</sup> trimester	175	49.00	NO	122	43.00
3 <sup>rd</sup> trimester	129	36.10			
<b>Time of 1<sup>st</sup> ANC flow up</b>			<b>Number of visits last pregnancy</b>		
1 <sup>st</sup> trimester	88	24.60	<4	124	76.50
2 <sup>nd</sup> trimester	239	67.00	≥4	38	23.50
3 <sup>rd</sup> trimester and beyond	30	8.40			
<b>Gravidity</b>			<b>Had danger sign</b>		
1	66	18.50	Yes	32	11.27
2-4	214	59.90	No	252	88.73
> 4	77	21.50			

Parity			Place of delivery previous pregnancy		
0 - 1	158	44.25	Home	164	57.74
2-4	174	48.74	Healthinstitution	120	42.25
>4	25	7.00			
<b>Planning to deliver</b>					
<b>Home</b>	17	4.700			
<b>Health institution</b>	340	95.20			

### 5.5. Awareness of clients about obstetric danger signs during pregnancy, labor and postpartum in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

When the clients were asked whether they knew or heard any obstetric danger sign, 225(63%) of the clients hear one or more obstetric danger signs whereas the rest 132(37%) don't mention any danger sign.

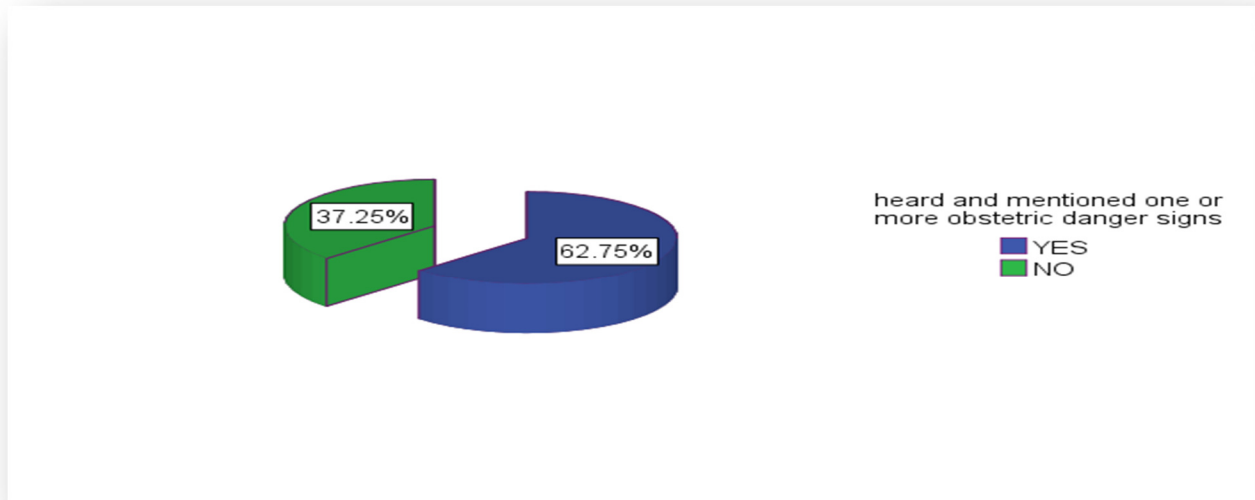


figure 3. Awareness of clients about obstetric danger signs during pregnancy, labor and postpartum in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

**5.6. Awareness of clients to wards specific obstetric danger signs during pregnancy, labor and postpartum in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

Clients were also asked to mention specific obstetric danger sign during pregnancy, labor and postpartum, severe vaginal bleeding was the most commonly mentioned danger sign (during pregnancy 224 (62.7%), delivery, 180(50.4%), and postpartum 210(58.8%)). However, some of the key danger signs like prolonged labor, mal presentation and high grade fever were not mentioned by significant number of the client as show in table 3.

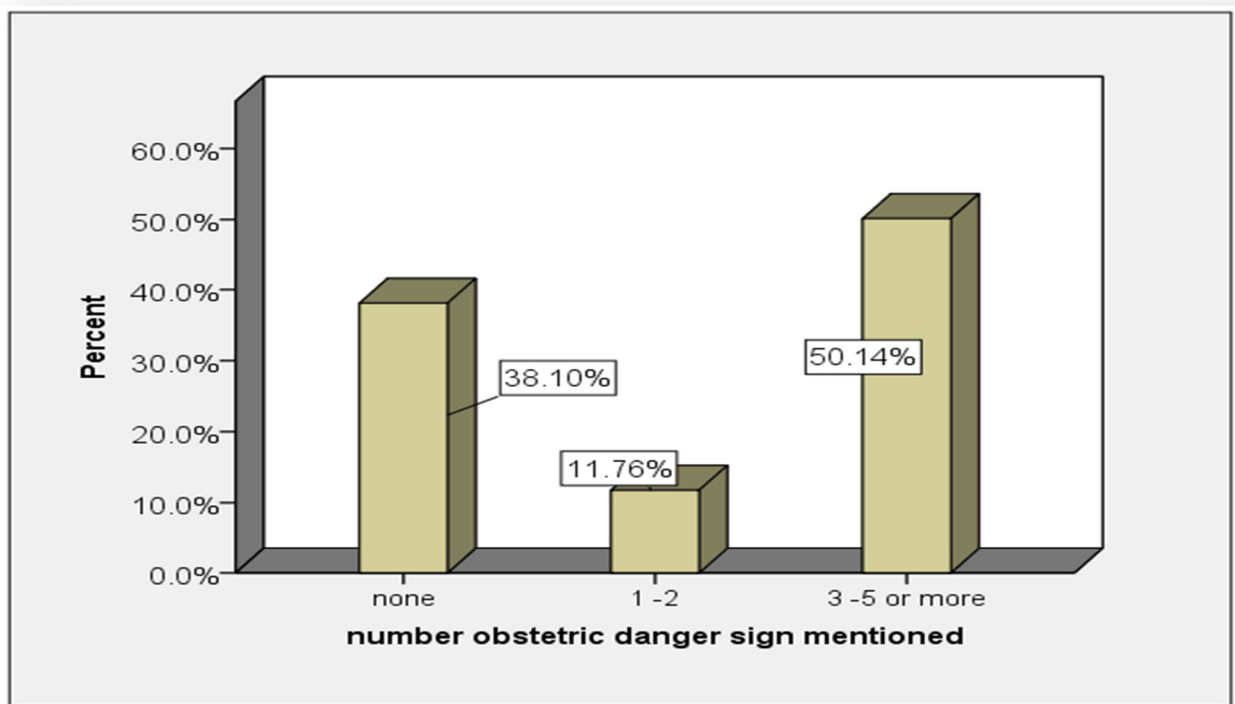
**Table.3 Awareness of clients about obstetric danger signs during pregnancy, labor and postpartum in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

Danger sign heard	PREGNANCY		DELIVERY		POST PARTUM	
	Yes	No	YES	NO	YES	NO
	N (%)	N ( % )	N ( %)	N (%)	N(%)	N (%)
Severe Vaginal bleeding	224(62.7)	133(37.3)	180(50.4%)	177(49.60)	210(58.8%)	147 (41.2%)
Convulsion	84 (23.5)	273(76.5)	50(14%)	307 (86%)	33 (9.24%)	324 (90.75)
Body swelling	117(32.8)	240(67.2)	-	-	-	-
Severe headache	148(41.5)	209(58.5)	148(41.5)	209 (58.5%)	148(41.5)	209 (58.5)
Decreases fetal movement	117 (32.8)	240 (67.2)	-117 (32.8)	-	-	-

Gush of fluid per vagina prior to labor	107 (30 )	250 (70)	-	-	-	-
Foul smelling vaginal discharge	50( 14)	307(86 )	27 (7.56)	330(92.24)	38 (10.64)	319(89.35%)
Retained placenta	-	-	29 (8.1)	328 (91.9)	-	-
Mal presentation	-	-	5 ( 1.4)	352(98.6)	-	-
Others ( prolong labor, fever)	-	-	5 (1.4)	352(98.6 )	-	-
Sources of information of the clients	Number	Percent				
Health institution	139	62	-			
Media	32	14	-			
Both health institution ; media	36	16				
Others	18	8				

**5.7. Distribution of the clients according to number of obstetric danger signs they mentioned in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

As one can see from the flowing chart, half of the study subjects, 179 (50.14%) knew 3- 5 or more obstetric danger signs but significant number, 132(38.10%) of the study subjects did not mention any danger signs.



**Figure 4. Distribution of the clients according to number of obstetric danger signs they mentioned in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

### **5.8. Distribution of the clients according to their Level of awareness of obstetric danger signs in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

This study indicates, about half 179(50.14%) of the study participants have good awareness toward obstetric danger signs whereas 132 (38.40%) have no awareness.

**Table 5.4 Distribution of the clients according to their level of awareness of obstetric danger signs in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

Level of awareness towards obstetric danger signs	Number	Percent
Good awareness	179	50.14
Fair awareness	46	11.76
poor awareness	132	38.10

### **7.5 Association between level of awareness of obstetric danger signs and socio-demographic characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

The association between socio-demographic characteristics and level awareness of obstetric danger signs was assessed using chi-square and p-value. Statistically significant association was found between age of the respondents ( $X^2 = 68.120$ ,  $P = 0.0001$ ), occupation of respondents ( $X^2=25.073$ ,  $P =0.002$ ) and level awareness of obstetric danger signs but there is no significant association between other socio-

demographic characteristics and level of awareness of respondents as show in the flowing table.

**Table 5.5.** Association between level of awareness of obstetric danger signs and socio-demographic characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

Socio-demographic characteristics	Level of awareness towards obstetric danger sign			Association	
	Poor awareness	Fair awareness	good awareness	Chi-square (x2 )	P -value
<b>Age (in years)</b>					
<20	11	1	2	68.120	< 0.0001
20-24	72	19	35		
25-29	35	17	65		
30-34	13	4	54		
>34	5	1	23		
<b>Marital status</b>					
Single	-	-	1	1.309	0.860
Married	135	42	177		
Others	1	-	1		
<b>Place of Residence</b>					
Urban	136	41	178	3.266	0.195
Rural	-	1	1		
<b>Level of Education</b>					
Illiterate	67	19	73	14.043	0.081
Can read and write	47	18	69		
Primary school	16	2	2		
Secondary school	6	3	21		
Collage and above	-	-	4		
<b>Occupation</b>					
Farmer	-	1	-	25.073	0.002
House wife	115	29	115		
merchant	16	8	51		
Others	3	3	9		

## 5.6. Association between level of awareness of obstetric danger signs and obstetric characteristics of the respondents in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017

In this study, the association between obstetric characteristics and level of awareness of the respondents was assessed and was found significant association between level of awareness towards obstetric danger signs and gravidity( $X^2$  70.513,  $P = 0.0001$ ), Parity( $X^2 = 64.729$ ,  $P < 0.001$ ), number of ANC visits during last pregnancy( $X^2 = 68.120$ ,  $P < 0.001$ ), having had history of still birth) ( $X^2 = 17.192$ ,  $P = 0.02$ ), but no association was found between level of awareness of towards obstetric danger signs and sources of information ( $X^2 = 11.585$ ,  $P < 0.171$ ), having danger sign during last pregnancy( $X^2 = 9.067$ ,  $P = 0.056$ ) as show in the flowing tables

**Table 5.6. Association between level of awareness of obstetric danger signs and obstetric characteristics in jigjiga city public health institutions, Ethiopia, April 15 to 30, 2017**

Obstetric characteristics	Level of awareness towards obstetric danger sign			Association	
	Poor awareness	Fair awareness	Good awareness	Chi-square (x2 )	P -value
<b>Gravidity</b>					
Primi gravida	52	3	11	70.513	<0.001
2-4	74	30	110		
>4	10	9	58		
<b>Parity</b>					
0-1	95	17	46	64.729	<0.001
2-4	39	23	112		
>	2	2	25		
<b>ANC flow up in last pregnancy</b>					
yes	59	29	74	14.677	=0.005
No	77	13	105		
<b>Number of ANC visits during last pregnancy</b>					
<4	117	34	165	12.063	0.017
>4	15	8	14		

Had danger signs in last pregnancy					
Yes	10	7	15	9.067	0.056
No	126	35	164		
Ever had still birth					
Yes	2	2	25	17.192	0.02
No	134	40	154		
Sources of information					
Health inst.	51	25	63	11.585	0.171
media	13	1	18		
Both media and Health inst.	15	5	16		
others	8	1	9		

## 6. Discussion

In this study, 132(37%) of the respondents were not aware of any obstetric danger signs but this is higher than the strategic national plan where at least 80% of the pregnant women are expected to have awareness of at least 3 key obstetric danger signs (6). Furthermore, this finding is slightly higher than study done in Egypt, in which slightly more than one quarter of the study subjects (26.5 %) were unaware of obstetric danger signs (10). This may be due to differences in socio-economic and health intervention programs in the two countries. This study also shows 179 (50.14%) of the clients have good awareness toward obstetric danger signs. This is higher than another study done in Tanzania, where awareness of danger signs was low (31%) (11) but it is comparable to study done in Mekele, Ethiopia, where majority of clients have good awareness of danger signs (16). Regarding awareness to specific danger sign, the most commonly mentioned danger signs were vaginal bleeding, 224 (62.7%), severe headache 148 (41.5%), body swelling, 117(32.8%), decreased fetal movement, 117 (32.8%). This is higher than finding of study done in east Wollega, Ethiopia, where only 28.38% of the study clients indicate, vaginal bleeding during pregnancy as danger sign but comparable to similar study done in Mekele city, Ethiopia, where commonly mentioned danger signs were vaginal bleeding 69.8% and body swelling 35.7%. These different findings in same country may be due difference in studying time. In this study the level of awareness was found to be significantly associated with age, occupation, gravidity, number of ANC visits, and having still birth in the past. This is comparable in other similar studies done in Egypt (10), Tanzania (11), Goba, Ethiopia (12). Increased awareness in Elder women, multigravida women may be due to repeated exposure to pregnancy and child birth. Merchant women have also more awareness than other women like farmers or housewives. This may be due to their chances to involve in the community to share experience with other women.

In this study, number of ANC visits made, having stillbirth in the past was significantly associated with level of awareness. This is comparable with, similar study done in Kenya (9) and East Wollega, Ethiopia (15). Hence provision of information about obstetric complication during ANC follow up may be a factor for this association. In this study, the respondents' educational level was not associated with level of awareness; this similar to another study done in, Ethiopia (15) but there was significant association between educational level and awareness of obstetric danger signs according to other studies done in Egypt (10), Tanzania (11). Despite these differences in findings, education is important for critical thinking and understanding of information.

## 7. CONCLUSION

This study indicated low awareness of obstetric danger in significant proportion of the respondents and some of the key danger signs of pregnancy were rarely mentioned or familiar to the pregnant women attending Jigjiga public health institution when we compare with national strategic plan. The study also shows association between level of awareness of obstetric danger signs and age, gravidity, history of having still birth, number of last pregnancy ANC visits but no association between the level of awareness danger signs and educational status of the respondents. This seems that women learn more about experiences related to pregnancy outcomes. Therefore, not only pregnant women but other family and community members should have awareness about obstetric complications.

## 8. RECOMMENDATION

This study reflects the need to increase awareness of pregnant women towards obstetric danger signs. The health care providers particularly those who have close contact with pregnant women during ANC follow up are recommended to have more active role in educating and advising about these dangers sign. The education should also be provided through other appropriate channels such as mass media

Further researches is also recommended for monitoring and standardizing the quality of information offered to pregnant women and community at large focusing on danger signs of pregnancy.

## 9. Limitation of the study

The institutional based study may not reflect the general population. Time constraint was also other limitations.

## 10. References

- [1] Steven G. Gabe et al. (2012) *Obstetrics: normal and problem pregnancies*. (6th ed.), 2007 Churchill Livingstone.
- [ 2] World Health Organization (WHO), United Nations Children’s Fund (UNICEF), and United Nations Population Fund (UNFPA). *Trends in Maternal mortality: 1990 -2015*.
- [ 3] Federal Ministry of Health (FMOH), Ethiopia, *Health and health related indicators: Addis Ababa: Ethiopia (2006-2007)*.
- [4] Lucas AO, Gilles HM (2003). *Short Textbook of Public Health Medicine for the Tropics*, (4thed), Book power London.
- [ 5] WHO, UNICEF, UNFPA, The World Bank, and the United Nations Population Division. *Trends in Maternal Mortality: 1990 to 2013*. Geneva,
- [ 6] Ethiopia Mini Demographic and Health Survey 2014. Addis Ababa: Central Statistical Agency; 2014.
- [7] Stevens RD (2000) Safe motherhood: an insight into maternal mortality in the developing world. *Health Millions* , 26: 34-37.
- [8] WHO, 2010. *Global health report*. Available <http://www.globalhealth.org/reports/report.php3>, last accessed on November 5, 2016.
- [9] Ossai EN, Uzochukwu BS (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 Edu* 5: 337. doi:10.4172/2161-0711.1000337.

- [ 10] Rashad, WA & Essa, RM. 2010. Women's awareness of danger signs of obstetric complications. *Journal of American Science* 6(10):1299-1306.
- [11] Hayat A. Amasha, Manar F. Heeba .2013. Maternal Awareness of Pregnancy Normal and Abnormal Signs. *OSR Journal of Nursing and Health Science (IOSR-JNHS)*.p- ISSN: 2320–1940 Volume 2, Issue 5 (Nov. – Dec. 2013), PP 39-45
- [ 12] Mwilike, Beatrice. 2013. Knowledge of danger signs during pregnancy and subsequent health seeking actions among women in kinondoni municipality, Tanzania
- [13 ] Bogale D. and Desalegn M.(2015). Knowledge of obstetric danger signs among child bearing age women in Goba district, Ethiopia: a cross-sectional study *BMC Pregnancy and Childbirth* (2015) 15:77 DOI 10.1186/s12884-015-0508.
- [ 14] Endalamaw M. Hawult T.(2012) The Level of Awareness on Danger Signs of Pregnancy and Associated Factors among ANC Attendant Pregnant Women in Debark Town, North West Ethiopia.
- [ 15] Abera W. Wanbaru A. (2013) Awareness of danger signs of obstetric complications among pregnant women attending antenatal care in east wollega, Ethiopia.
- [16] Abiyot T. Kassa M. Buruh G. Kidanu K. (2015) Awareness of Obstetric Danger Signs and its Associated Factors among Pregnant Women in Public Health Institutions, Mekelle City, Tigray, Ethiopia. *J Preg Child Health* 2: 167
- [ 17] Hailu M1, Gebremariam A, Alemseged F (2010) Knowledge about Obstetric Danger Signs among Pregnant Women in Aleta Wondo District, Sidama Zone, Southern Ethiopia. *Ethiop J Health Sci* 20: 25-32.

[18] Ethiopian Demographic and Health Survey 2016. Addis Ababa: Central Statistical Agency; 2016.

[19] Haywood L. Brown et al. (2012): Approaches to reduction of maternal mortality in resource-limited settings. Up-to-date 21.6

(20) Education material for teachers of midwifery : midwifery education modules (PDF) (2nd ed.). Geneva [Switzerland]: World Health Organisation. 2008. pp. 17–36.

(21) Federal Democratic Republic of Ethiopia Central Statistical Agency Population of Ethiopia for All Regions At Wereda Level from 2014 Page: 21 Somali region

[22] Cunningham, Gary (2005). William Obstetrics (PDF) (22 ed.). McGraw-Hill Companies. p. 121. ISBN 0-07-141315-4. Retrieved 19 August 2016.

[23] Maternity - Prevention, Early Recognition & Management of Postpartum Haemorrhage (PPH) From Department of Health, NSW. 21-Oct-2010

[24] federal democratic republic of Ethiopia, ministry of health, author. National reproductive strategy, 2006 -2015, Addis Ababa, Ethiopian: FMOH; 2006

## 11.appendix

### 11.1. Consent form

Dear respondent I am graduating medical doctor from St. pauls hospital millennium medical college. You are invited to voluntary participate in less than 20minutes research project interview to assess awareness of danger signs of pregnancy and associated factors among pregnant women attending antenatal care in public health institutions in Jigjiga city. I want to stress that an honest reflection of your views, without any fear of victimization, will be appreciated. If you are willing to participate, please sign the attached consent form. In signing this document, you voluntarily agree to complete a questionnaire which will be completed by field workers on my behalf. I understand the purpose of the study and that my identity and all responses I give will be kept completely confidential. I retain the right to withdraw from the study at any time, without any fear of victimization.

PARTICIPANT SIGNATURE-----RESEARCHERS SIGNATUE-----

## 11.2. QUESTIONNAIR

following questions should be asked to a woman who is currently attending jigjiga public health institutions for ANC Flow up

Questionnaire number: /\_\_\_/\_\_\_/\_\_\_/\_\_\_/. Hospital /Health center name.....

### SECTION1: SOCIODEMOGRAPHIC AND OBSTETRIC CHARACTERISTICS

1.1 What is your current age? Age in years: \_\_\_\_\_

1.2 What is your current marital status?

a) Single (b) Married (c) Separated (d) Divorced (e) Widowed (f) other

1.3.) Your religion? a) Muslim b) orthodox c) protestant d) others

1.4.) Ethnicity? A) Oromo b) Amhara c) Somali d) other

1.5.) What is your highest level of education?

a) Cannot read and write b) can read and write only c) Primary d) Secondary e) University/college

1.6.) What is your occupation?

a) farmer b) House wife c) Employed by the government d) Employed by a private institution f) Others (Mention) \_\_\_\_\_

1.7. where is your current residence? a) rural b) urban

1.8. How many pregnancies have you had in your entire life time (including abortions, still and live births)? Number \_\_\_\_\_

1.7 How many times have you given birth in your life time? number \_\_\_\_\_ 1.8. Have you ever had stillbirth? A) yes B) no 1.9. What is the gestational age of your current pregnancy? a) first trimester b) second trimester c) third trimester

1.11. When did you start first antenatal visit? Month \_\_\_\_\_

-37

1.12. Where would you be planning to deliver? \_\_\_\_\_

## SECTION 2: EXPERIENCE IN LAST PREGNANCY

2.1. Did you attend antenatal clinic during your last pregnancy? (a) yes b) no

2.2. What was the gestational age of pregnancy at your first ANC visit?  
Months \_\_\_\_\_

2.3 How many times did you attend clinic during that pregnancy? Number \_\_\_\_\_

2.4) During the ANC visits were you alerted by health care providers that you have a danger sign? a) Yes b) No

2.5. Where did you deliver? \_\_\_\_\_

## SECTION 3: AWARENESS ABOUT ON DANGER SIGNS DURING PREGNANCY

3.1 Have you ever heard about danger signs during pregnancy?

a) Yes b) No

3.2. Where did you hear about danger signs during pregnancy?

---

3.3 What danger signs do you know that occur during pregnancy, labor and postpartum? (write p=during pregnancy, l=labor, pp=postpartum more than one)

a) Severe vaginal bleeding \_\_\_\_\_ b) Convulsions \_\_\_\_\_ c) Severe headache with blurred vision \_\_\_\_\_ d) Severe abdominal pain \_\_\_\_\_ e) Reduced fetal movement f) High grade Fever \_\_\_\_\_ (g) Swelling of fingers, face and legs

h) gush fluid per vagina prior to labor, I) foul smelling vaginal discharge \_\_\_\_\_

j) Retained placenta \_\_\_\_\_ k) Hands, feet, and face come first during labor

(l) prolonged labor