Knowledge of Obstetric Danger Signs and its Associated Factors in Debaytilatgin District, Ethiopia: A Community Based Cross Sectional Study

Mulugeta Dile*, Daniel Taddesse*, Molla Gedefaw* and Tarekegn Asmama*

1Department of Midwifery, College of Health Sciences, Debre Tabor University, Debre Tabor, Ethiopia
2Department of Obstetrics and Gynaecology, College of Medicine and Health sciences, University of Gondar, Gondar, Ethiopia
3Department of Public Health, Gamby College of Medical Sciences, Bahirdar, Ethiopia
4Department of Reproductive Health, College of Medicine and Health Sciences, Debere Markos University, Debere Markos, Ethiopia

Abstract

Introduction: Raising awareness of women on danger signs of pregnancy is crucial for safe motherhood. In Ethiopia, a country where maternal morbidity and mortality is high; little is known about the knowledge level of pregnant women on obstetric danger signs and its associated factors.

Objective: This study aimed to assess pregnant women’s knowledge about obstetric danger signs and associated factors in Ethiopia.

Methods: A community based cross-sectional study was conducted from April 1 to October 30, 2013, on a sample of 802 pregnant women systematically selected from 8 rural and 2 urban Kebeles (the smallest administrative unit). A pre-tested structured questionnaire was used to collect the data. The collected data were entered into a computer by using Epi Info version 3.5.3 and analyzed using SPSS version 20 for windows. Binary and multiple logistic regressions were done to explore factors determining maternal knowledge on obstetric danger signs.

Results: Seven hundred sixty nine women participated in the study making a response rate of 92.2%. Out of 769 women participated in this study, 56.8% were knowledgeable about obstetric danger signs. Place of birth (AOR=0.53, 95% CI=0.32-0.88), Women’s educational status (AOR=6.98; 95%CI=3.73-13.08), high Parity (AOR=2.87; 95%CI=1.53-5.39) and Lack of antenatal care (AOR 3.46; 95%CI=1.54-7.79) were found to be significantly associated with knowledge on danger signs during pregnancy, labour and post-partum.

Conclusion: This study showed low level of Knowledge of danger signs during pregnancy among women in Debaytilatgin district. The promotion of universal antenatal care follow-up, educating women, avoiding high parity and advocating institutional delivery is very important.

Keywords: Knowledge; Danger sign; Pregnant mothers; Associated factors; Ethiopia

Background

Preventable mortality and morbidity remains a difficult challenge in many developing countries like Ethiopia. Every pregnant woman faces the risk of sudden, unpredictable complications that could end up with death or injury to herself or to her infant. Pregnancy related complications couldn’t be reliably predicted [1]. Each year, approximately 287,000 women die from complications related to pregnancy and childbirth, with 99% of these deaths occurring in developing countries. Maternal mortality ratio (MMR) in developing regions is 15 times (240/100,000 live births) higher than in developed regions (16/100,000live births). Sub-Saharan Africa had the highest MMR (500 maternal deaths per 100,000 live births) [2]. It has been reported that Ethiopia is one of the six countries that contribute about 50% of the maternal deaths; the others are India, Nigeria, Pakistan, Afghanistan and the Democratic Republic of Congo [3].

The largest proportion of such deaths is caused by obstetric haemorrhage, mostly during or just after delivery, followed by eclampsia, sepsis, complications of unsafe abortion and indirect causes, such as malaria and Human Immune Virus (HIV) [4]. Obstetrical haemorrhage may be ante partum, such as with placenta previa or placental abruption, or more commonly, it is postpartum from uterine atony or genital tract lacerations [5].

Maternal deaths happen for two reasons: a direct obstetric death which is caused by complication that develops directly as a result of pregnancy, delivery or the postpartum period; an indirect obstetric death, which is due to existing medical conditions that are made worse by delivery or pregnancy [6]. There are five major medical causes of direct obstetric death: haemorrhage (28%); complications of unsafe abortion (19%); pregnancy-induced hypertension (17%); infection (11%); and obstructed labour (11%) [6].

In Ethiopia, health professionals attend only 10% of the deliveries. This situation very well explains the high Maternal Mortality Rate in Ethiopia, which is one of the highest in the world. According to Ethiopian Demographic and Health survey of 2011 MMR was 676 per 100,000 live births and slightly increase from EDHS 2005 which was 673 per 100,000 [7].

Evidence suggests that ensuring the accessibility and use of obstetric services and raising the awareness of women about obstetric danger...
sign could save 310,000 newborn lives a year, and also, improves early detection of problems and reduces the delay in the decision to seek obstetric care [8].

Obstetric Danger Signs are problems that face the mother during pregnancy, labour and the post-partum period and need early management. This includes any bleeding from the vagina, no matter how slight, swelling or puffiness of the face or hands or severe swelling of the legs, Severe or continuous headache, dimness or blurring of vision, Severe or continuous pain in the abdomen (belly). In addition, it includes severe or continuous vomiting, chills or fever, Pain or burning with urination, Sudden escape of fluid from the vagina in the second half of pregnancy, if the baby (fetus) moves less than you are used to, or stops moving and pelvic or abdominal pain [9].

However, like in many developing countries, knowledge of women about obstetric danger signs remains low in Ethiopia [10]. To alleviate this problem, Ethiopian government creates strong political will. Applying multi-pronged approaches at local and national levels, organized capacity building efforts, and prioritization of funding for maternal health services utilizations, but the effect of large populations, health disparities still exist in vulnerable Ethiopian subgroups, including girls, rural dwelling mothers, and poor communities are major challenges for implementation of this strategy [11].

For such low knowledge level, factors associated with age, educational status, income, decision making power, place of delivery and possession of radio/television could have direct or indirect effects [12,13]. In a Community based cross-sectional study conducted in Arbaminch town, Educational status, age, monthly income, and decision making power were independently associated with knowledge of obstetric danger signs [12]. In addition, educational status of the mother, place of delivery and having functional radio were found to be independent predictors of knowledge of women about the danger signs of pregnancy in Tsegedie District [13].

Increasing awareness of pregnancy danger signs and birth preparedness and streamlining.

Existing transportation systems are the most effective means to address the first two delays.

However, their impact is conditional upon the availability of good quality health care services [14]. Obstetric danger signs are easy to identify by mothers and the community at large, available studies indicate that mothers do not have enough knowledge about it. As far as the knowledge of the researcher is concerned, there is no recent data about the knowledge of pregnant mothers regarding obstetric danger signs in the study area. The study assessed the current level of Knowledge about Obstetric Danger Signs and Associated Factors among Pregnant Mothers in Debaytilatgin District, Northwestern Ethiopia.

Methods

Setting

A community based cross sectional study was conducted from April 1 to October 30, 2013 in East Gojjam, Debaytilatgin district, which is, located Northwestern Ethiopia 300 km far from Addis Ababa. According to the report from the District Health Office in 2005 E.C; the total population of the district was about 141,068. Out of this 71,240 were male, and 69,829 females. Total Population of reproductive age group (15-49) is 33,264. Debaytilatgin district is so remote which is deprived of infrastructural and other forms of social and economic services. There were 42 Health Extension workers, 95 Health workers, 6 Health centers and 22 Health Posts in the District [15].

Participants

All women in reproductive age group (15-49) found in Debaytilatgin District were the source population. All pregnant mothers found in Debaytilatgin district were the study population. Of all pregnant mothers registered in Debaytilatgin district, those who were severely ill during data collection cannot hear and unable to respond to the questions and whose gestational age less than 12 weeks was excluded from the study. Pregnant women who were registered in Debaytilatgin district were included. Whereas, those pregnant mothers whose gestational age less than 12 weeks and those who were severely ill during data collection, cannot hear and unable to respond to the questions were excluded.

Sampling

The required sample size was calculated by considering the assumptions for single population proportion formula. The proportion of pregnant women who know about obstetric danger signs 45.9% (19), 5% of absolute Precision, Z=standard normal distribution value at 95% confidence level of Zα/2=1.96, and adding a 5% non-response rate and design effect of 2, the final sample sizes were 802.

A Cluster sampling technique was employed to select the kebeles. Debaytilatgin district has 22 kebeles and classified into 22 clusters, among them 10 clusters were selected randomly. Finally, all pregnant women found in selected 10 kebeles were included in the study.

Instruments

Pretested and structured questionnaires using face-to-face interviews were used for data collection. Pretest was undertaken among15 Mothers of randomly selected kebeles, which were not included in the study to check the consistency of the questionnaire and necessary adjustment, was done prior to the actual data collection. Moreover, the supervisors and principal investigator for completeness and consistency checked filled questionnaires daily.

Five female Bsc midwives (supervised by Msc. Midwives) collected data. A two days comprehensive training was given to data collectors and supervisors. The questionnaire was first prepared in English and then translated into Amharic (the local language), and back into English to ensure consistency.

Variables

Knowledge of obstetrics danger signs was the dependent and Sco demographic data (Age, religion, marital status, level of education, income), Obstetric factors (parity, complicated history experienced), ANC follow up, Previous experience, Place of delivery, Information source were independent variables.

Analysis

The questionnaires were coded, entered and cleaned by EPI-Info 3.5.3 statistical software and then exported to SPSS windows version 20 for further analysis. Data was summarized and presented using descriptive statistics. Model fitness was checked with the assumptions of Hosmer and Lemeshow’s test. Bivariate and multivariate logistics regressions were computed to identify the presence and strength of associations. Odds ratios with 95% CI were computed and variables having p-value less than 0.05 in the multiple logistic regression models was considered significantly associated with the dependent variable.
Operational definition

If the pregnant mother state danger signs above mean (8) called knowledgeable and less knowledgeable if she state less than mean (8) danger signs.

Ethical considerations

Ethical clearance was obtained from the Ethical review committee of Debre Markos University. In addition, the official letter of cooperation was granted to the administrative offices of the three hospitals. Verbal informed consent was obtained from each participant before the start of the interview. Due to the high illiteracy, it was considered impractical to obtain written consent from each study participant. All interviews were conducted in a private room and confidentiality was insured.

Results

Socio-demographic characteristics

Out of 802 mothers, 769 were included in the study, making a response rate of 95.9%. The mean age of the respondents was 28 (SD=8) years. Half (51%) of the mothers cannot read and write. Out of the total mothers, 97.7% were orthodox Christians and majority (82%) was Amhara. Seven hundred thirty eight (96%), were married (Table 1).

Obstetric history related characteristics

The mean parity of study participant was 2 (SD=4) children. The majority of respondents were delivered two to four children (Table 2).

Knowledge about obstetric danger signs

Knowledge about obstetric danger sign during pregnancy: Depending on the cumulative response about questions about obstetric danger signs, those who answer correctly were 437 (56.8 %). Only 413 (53.7%), 87 (11.3%) and 49 (6.4%) of the respondents spontaneously mentioned vaginal bleeding, blurred vision and severe abdominal pain as danger signs during pregnancy, respectively (Table 3).

Knowledge about obstetric danger sign during labour and delivery, excessive vaginal bleeding 415 (54%), labour lasting more than 12 hours 325 (42.3%) and water break without labor 266 (34.6) were the commonest mentioned (Figure 1).

Regarding danger signs during post-natal period, the respondents cited retained placenta 372 (41.5%), vaginal bleeding 364 (40.6%), convulsion 89 (9.9%) as the commonest problems. Besides, about half or 55.7% know the danger signs during postpartum. About 83% of the respondents reported that they identified place of delivery ahead of childbirth, which is a health institution (Figure 2).

Factors associated with obstetrics danger signs

In the binary logistic regression, analysis revealed that, being current marital status married, had 4.2 times more likely knowing danger signs during labour and delivery, excessive vaginal bleeding 415 (54%), labour lasting more than 12 hours 325 (42.3%) and water break without labour 235 (30.6%) were the commonest mentioned (Figure 1).

Regarding danger signs during post-natal period, the respondents cited retained placenta 372 (41.5%), vaginal bleeding 364 (40.6%), convulsion 89 (9.9%) as the commonest problems. Besides, about half or 55.7% know the danger signs during postpartum. About 83% of the respondents reported that they identified place of delivery ahead of childbirth, which is a health institution (Figure 2).

Table 1: Socio-demographic characteristics of the study subjects, Debaytilatgin District, November 2013 (n=769).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthodox</td>
<td>751</td>
<td>97.7</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>2.3</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>634</td>
<td>82.4</td>
</tr>
<tr>
<td>Others</td>
<td>135</td>
<td>17.6</td>
</tr>
<tr>
<td>Educational status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannot read and write</td>
<td>392</td>
<td>51</td>
</tr>
<tr>
<td>Read and write</td>
<td>132</td>
<td>17.2</td>
</tr>
<tr>
<td>Grade 1-6</td>
<td>106</td>
<td>13.8</td>
</tr>
<tr>
<td>Grade 7-12 and above</td>
<td>139</td>
<td>18.1</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>House wife</td>
<td>497</td>
<td>64.6</td>
</tr>
<tr>
<td>Others **</td>
<td>272</td>
<td>35.4</td>
</tr>
<tr>
<td>Monthly income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;500</td>
<td>479</td>
<td>62.3</td>
</tr>
<tr>
<td>500-1000</td>
<td>210</td>
<td>27.3</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>80</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Table 2: Obstetric history characteristics of the study subjects, Debaytilatgin District November 2013 (n=769).

<table>
<thead>
<tr>
<th>Danger signs of pregnancy</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe vaginal bleeding</td>
<td>413</td>
<td>53.7</td>
</tr>
<tr>
<td>Persistent back pain</td>
<td>86</td>
<td>11.2</td>
</tr>
<tr>
<td>Severe abdominal pain</td>
<td>49</td>
<td>6.3</td>
</tr>
<tr>
<td>Water break without labor</td>
<td>266</td>
<td>34.6</td>
</tr>
<tr>
<td>Persistent vomiting</td>
<td>57</td>
<td>7.5</td>
</tr>
<tr>
<td>Convulsion</td>
<td>160</td>
<td>20.8</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>87</td>
<td>11.3</td>
</tr>
<tr>
<td>Severe head ache</td>
<td>67</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Table 3: Mentioned or reported obstetric danger signs during pregnancy among pregnant mothers, Debaytilatgin district, Nov 2013.

without labour 235 (30.6%) were the commonest mentioned (Figure 1).

Regarding danger signs during post-natal period, the respondents cited retained placenta 372 (41.5%), vaginal bleeding 364 (40.6%), convulsion 89 (9.9%) as the commonest problems. Besides, about half or 55.7% know the danger signs during postpartum. About 83% of the respondents reported that they identified place of delivery ahead of childbirth, which is a health institution (Figure 2).
the danger signs of pregnancy, delivery and post-natal compared to women with not-married women in the district (OR=4.2, 95%CI: 2.22-8.14). Giving birth of more than one child were 2.87 times more likely to know about obstetric danger signs when it compared to parity one. If pregnant women have primary education, secondary education and above, they are more likely to have knowledge about danger sign during pregnancy, labour and delivery when it compared with those who were not able to read and write (Table 4).
This community-based study has attempted to assess the knowledge of pregnant mother about obstetric danger signs and associated factors in Debaytaitgin district. Out of the total study subjects, 56.8% were knowledgeable about obstetric danger signs. In this study, about 413 (53.7%) mentioned vaginal bleeding as danger sign during pregnancy, which is higher than study in Aleta wondo (45.9%) and Gambia (14.8%) [16,17]. This difference might be due to socio-cultural difference and difference in the implementation of relevant health intervention programs.

Danger signs during labor and delivery were severe vaginal bleeding, severe headache, blurred vision, convulsion, persistent vomiting, persistent back pain, water break without labor and labor lasting more than 12 hours. In this study a proportion of pregnant women, who mentioned bleeding as danger signs during labor and childbirth (54.0%) were in line with Aleta wondo study finding (56.0%) [17]. Prolonged labor, which is one of the top five major causes of maternal mortality and topmost causes of morbidity in low-income countries. Only 42.3% of study participant report prolonged labor. The proportion of the study who mentioned labor lasting more than 12 hours as danger sign was lower than Ethiopia study finding (53.2%) and higher than the Uganda study (18.3%). This difference might be due to socio-economic and health intervention activities in the areas.

Some danger signs are not mentioned as danger signs by participant similarly in ante partum, intrapartum and post-partum period. Study participants who were able to mention convulsions during pregnancy were only 20.8%, but during post-partum the figure becomes even worse only 12.2%. It is opposite with studies done in Aleta wondo 4.7%, 11.4% pregnancy, post-partum respectively, and it is higher than study done in Bolivia, Indonesia, and Pakistan [18]. In Tanzania, controversially there were no differences in the awareness of danger signs during pregnancy, during delivery or after delivery as related to age, educational level, number and place of deliveries, number of antenatal care visits and woman informed of a risk.complication during antenatal care [19]. This is because one can mention as a danger signs during pregnancy and not able to recognize it as a danger sign during post-partum period and difference in the implementation of relevant health intervention programs. Educational status and age had shown statistically significant association with knowledge about danger signs in this study. Individuals with educational status of primary and above were more likely to have knowledge than those who had no formal education. This finding was in line with other studies done in Ethiopia. A study done in rural Uganda also shows that those who had secondary education had more knowledge about obstetric danger signs than who had primary education [17]. This can be possibly explained as education has own role in understanding and recognizing obstetric danger signs danger. A study conducted in rural Kenya show that severe abdominal pain (92.2%), and prolonged labor (90.4%) were the most commonly recognized danger signs of obstetric which is inconsistent with the corresponding values of this finding [20]. The majority (92.7%) of the respondents has attended ANC at least once. This proportion is higher when compared to Ethiopian DHS 2011 for Amhara region (41.3%) [7], since this study is conducted in one of the areas (woreda) which has committed health professionals that search pregnant mother and registered them for ANC follow up and possible institutional delivery. This could be the possible explanation for the difference. ANC follow up is significantly associated with knowledge on danger signs and it is in line with a study done in Bahir Dar [21].

However, this study does have some inherent limitations. During early gestation of first trimester pregnancy, which is, less than 12 weeks, women didn’t know whether they are pregnant or not. Therefore, those
whose gestational age less than 12 weeks were excluded. In addition, this study was not supplemented with qualitative study.

Conclusions and Recommendations

The present study identified that ANC follow up, level of education, place of birth and age were paramount variable to increase knowledge of pregnant mother about obstetric danger signs. Institutional delivery is still low because half of the respondents did not know about danger signs that can occur during pregnancy, labor and post-partum. Therefore, the promotion of universal antenatal care follow-up, educating women, avoiding high parity and advocating institutional delivery are very important.

Authors’ Contributions

MD wrote the proposal, participated in data collection, analyzed the data and drafted the paper. DT, MG and TA approved the proposal with some revisions, participated in data analysis and revised subsequent drafts of the paper. All authors read and approved the final manuscript.

Acknowledgements

We are very grateful to Debre Markos University for the approval of the ethical clearance and Debaytelatigin Health and Administrative offices for their cooperation to the successful accomplishment of this research project. We would like to thank all women who participated in this study for their commitment in responding to our interviews. Our gratitude also goes to supervisors, the data collectors and the staff at the hospitals.

References