KNOWLEDGE, RISK PERCEPTION AND ASSOCIATED FACTORS TOWARDS OBSTETRIC DANGER SIGNS AMONG MOTHERS IN DEBRE BERHAN TOWN, NORTH SHOA, ETHIOPIA

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ABSTRACT

BACKGROUND: Child birth is also known as labour and delivery. It is an exciting time in the life of a family. Occasionally a pregnant woman may experience signs and symptoms which pointer danger. Danger signs are those signs that a woman will see, or those symptoms that she will feel which indicate that something is going wrong.

METHODS: A community based cross sectional study design was conducted on a sample of 405 mothers from April 1- April 30/2017. Study participant were selected using simple random sampling by allocating proportion to population size for each selected kebeles. A structured questionnaire was used to collect the data. The data were coded and entered into Epi data version 3.1 and the analysis was carried out in a statistical package for social science versions 22. Descriptive statistics for each variable and binary logistic regression analysis with 95 % CI was carried out.

RESULT: A total of 405 respondents were participated with a response rate of 97.3%. Out of which 50.6% have good knowledge about obstetric danger signs. Educational status [AOR=7.26, 95%CI (1.219-43.247), number of ANC visits [AOR=2.912, 95%CI (1.27-6.681)] and information on danger signs [AOR=2.366, 95%CI (1.089-5.139)] were found to be significantly associated with knowledge of obstetric danger signs. Twenty-eight-point six percent of respondents had good perception towards obstetric danger signs. Occupation [AOR=3.711, 95%CI (1.256-10.699)], number of ANC visit [AOR=4.575, 95%CI (1.439-14.543)] and information about danger signs [AOR=4.204, 95%CI (1.243-14.223)] were found to be significantly associated with perception towards obstetric danger signs.

CONCLUSION: This study showed low level of Knowledge and perception towards obstetric danger signs. Occupation, educational status, number of ANC visits and information on danger signs were significantly associated with knowledge and/or perception. It is recommended that mothers should have at least four antenatal visits and more educational program about obstetric danger signs needs to be implemented to increase knowledge and risk perception.

KEY WORDS: Danger signs, Knowledge, Risk perception, Ethiopia

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INTRODUCTION

Worldwide, a projected half million women die as a result of pregnancy and childbirth related complications. Virtually all of all maternal deaths occur in low resource countries[1]. Most could have been prevented[2]. Ethiopia has one of the highest maternal mortality statistics globally (353/100,000) and is one of the 10 countries that accounted for 59% of the global maternal deaths in 2015[3].

The maternal mortality ratio in developing countries in 2015 is 239 per 100 000 live births versus 12 per 100 000 live births in developed countries. There are large differences between countries, but also within countries, and between women with high and low income and those women living in rural versus urban areas[4]. Globally majority of maternal death were caused by hemorrhage (22.9%), hypertensive disorders (18.5%), abortion (14.6%), and sepsis (8.6%)[5]. Indirect causes such as malaria, diabetes and anemia which are aggravated by pregnancy can also lead to maternal death[6]. Knowledge of danger signs during ANC, delivery, and perinatal period is central for safe parenthood. Maternal morbidity and mortality could be prevented significantly if women and their families recognize obstetric danger signs and promptly seek health care[7]. The commonest danger signs during pregnancy include vaginal bleeding, swollen hands/face, convulsion, fever and blurred vision. Key danger signs during labor and childbirth include severe vaginal bleeding, pro-longed labor, convulsions, and retained placenta[7,8]. Lack of knowledge on the significance of symptoms and or signs of obstetric complications is one of the reasons of failure of women to identify and seek timely appropriate emergency care[9]. Perception of obstetric danger signs is also the vital initial stage in being compliant and accepting appropriate and timely referral to obstetric care[10]. A community based cross-sectional study conducted in Tanzania showed that about half of the study subjects knew at least one obstetric danger sign[11].

Descriptive cross- sectional study carried out among antenatal care clients at Kenya National Hospital revealed that 27.9% of the study respondents were not informed about danger signs in pregnancy[12]. In generally high levels of maternal mortality can be reduced by empowering women with knowledge on danger signs of pregnancy and promote appropriate health seeking perception. Little is known about the current level of mothers' knowledge and associated factors in Ethiopia as evidenced by literature[13,14]. Therefore, this study aims to assess the current status of knowledge, risk perception about obstetric danger signs and associate factors among mothers in Debre Berhan Town, North Shoa, Ethiopia.

METHODS

Study area

The study was conducted in Debre Berhan town Amhara regional state. Debre Berhan is located in the North Shoa Zone of the Amhara Regional state, about 130 kilometers North East of Addis Ababa. The total population of the town is 92,887 of which, 42,002 are males and 50,885 are females. Debre Berhan city administration has nine kebeles. In Debre Berhan town there are three public health centers, one referral hospital, one private general Hospital and fifteen private clinics.

Study Design and Period

A community based cross sectional study was conducted in Debre Berhan town from April 1-30, 2017

Population

Population source

All mothers who gave birth in the last one year at Debre Berhan town.

Study population

All mothers who gave birth within the last one year from selected three kebeles of Debre Berhan towns and fulfill inclusion criteria.

Sample size determination

The single population proportion formula was used to calculate the sample size by considering the proportion (p) of knowledge on obstetric danger sign from the previous study 56.8 % (15) adding non-response rate of 10% and considering the assumption of a 95% confidence level, a 5% margin of error, the sample size was 415 mothers

Sampling Procedure

In Debra Berhan town there are nine kebeles from this three kebeles were selected by simple random sampling. After selecting the kebeles the total sample size (n = 415) was allocated proportionally on each kebeles based on the number of mothers who gave birth in the last one year prior to the data collection of this study. Finally, systematic sampling was employed to select the study subjects in each kebeles until the desired numbers of sample was obtained. To select the first house hold in each kebeles, data collectors were used the kebeles administration office and the church as a reference/ a starting point than the data collectors were used spinning techniques to select the first household by rotating a pen and select the house which is found in the direction of the tip of the pen. Then consequently gone to the right direction of the first household 4 house was coded and using lottery method one household was selected. From this onwards Data was collected in every 4th interval until the desired sample was achieved in kebeles.

Data collection tool and procedure

Data were collected by face to face interview using a structured Questionnaire adapted from the survey tools developed by JHPIEGO(16).The questionnaire was used to assess the knowledge and risk perception of mothers towards pregnancy danger signs. The data collection tool was pre-tested on women with similar characteristics living out of the study area on 10% of sample size or 42 mothers. After pre-testing further adjustments to the data collection tool was made to improve clarity, understandability, and simplicity of the messages. All of the questionnaires were checked for completeness and accuracy before, during and after the period of data collection. Eight diploma midwives who were fluent in speaking local language were involved in the data collection. Two Bachelor of Science degree (BSc) holder health professionals were recruited as supervisors.

Data quality control

After pre-testing the questionnaire, Cronbatch's Alpha was calculated by using SPSS window version 22.0 to test internal consistency (reliability) of the item and Cronbatch's Alpha greater than 0.7 was considered as reliable. On the top of this, content validity was cross checked by another maternal and/or reproductive health expert at Arba Minch and Debra Berhan University. Data collectors and supervisors were trained for two days on the study instrument and data collection procedure. The principal investigator and the supervisors checked the collected data for completeness and corrective measures was taken accordingly.

Data Processing and Analysis

The collected data was checked visually by the investigators, then data was coded, entered and cleaned using Epi-Data version 3.1 software and finally exported into statistical package for social science version 22 for analysis. Descriptive statistical analysis such as simple frequencies, measures of central tendency and measures of variability was used to describe the characteristics of participants. Then the information was presented using frequencies, summary measures, tables, and figures. Initially, bivariate logistic regression was carried out to see the association of each of the independent variables with the outcome variable. Thereafter, the multivariable logistic regression method was used. The variables that were not significant in the bivariate logistic regression were not considered in the multiple regression analysis. P- Value of <0.05 and 95% confidence level was used as a difference of statistical significance.

OPERATIONAL DEFINITION

Good knowledge: Those respondents who scored equal and above mean score of the knowledge questions towards danger signs.

Poor knowledge: Those respondents who scored below mean score of the knowledge questions towards danger signs.

Good perception: participants who scored equal and above mean score of perceptions questions towards danger signs.

Poor perception: participants who scored below mean score of perceptions questions towards danger signs.

ETHICAL APPROVAL

Ethical clearance was obtained from Debra Berhan University, College of Health Science Institutional Ethical Review Board. Support letter was obtained from department of midwifery to Debra Berhan city Administration. Then again Debra Berhan city Administration wrote letter to selected kebeles. Informed verbal consent was obtained from the study subjects after the data collectors explained the study objectives, procedures and their right to refuse not to participate in the study. Furthermore, confidentiality of the study subjects was assured.

RESULTS

Socio demographic characteristics

Out of the total 415 mothers who were planned for the study, 405 were successfully interviewed yielding the response rate of 97.6%. The mean age of the study subjects was 28.6 (SD ± 5.48). Orthodox Tewahido were found as a dominant religion which accounting 354(87.4%). Around 159(39.3%), reported that they were attended diploma and above. 359(88.6%) of respondents were Amhara in ethnicity. Regarding marital status of the respondents, 341 (84.2%) were married (Table 1).

Table 1 .Socio demographic characteristics of respondent in Debre Berhan Town, North Shoa Zone, Ethiopia, 2017 (n=405)

Variables	Frequency	Percent (%)
Age of respondents		
15-19	3	0.7
20-24	97	24.0
25-29	144	35.6
30-34	84	20.7
35-39	57	14.1
>=40	20	4.9
Ethnicity		
Amhara	359	88.6
Oromo	31	7.7
Tigre	9	2.2
Other	6	1.5
Religion		
orthodox	354	87.4
Muslim	21	5.2
Protestant	27	6.7
Catholic	3	0.7
Educational status		
Can't read and write	30	7.4
Read and write	24	5.9
Elementary	81	20.0
Secondary	111	27.4
Diploma and above	159	39.5
Occupation		
Governmental employee	119	29.4
NGO employee	37	9.1
Private business(merchant)	160	39.5
Daily laborer	10	2.5
Housewife	70	17.3
Other	9	2.2
Origin of residence		
Urban	327	80.7
Rural	78	19.3
Monthly income		
<500	26	6.4
500-1000	69	17.0
>=1000	310	76.5

Obstetric history related characteristics

Out of total 405 respondents 194(47.9%) had history of one pregnancy. Vast majority of respondent 352(86.9%) had history of ANC follow up. Among those who had ANC, 298(84.7%) had got health education about danger Signs of obstetric complications. Majority 267(65.9%) of the mothers were pervious history of institutional delivery (Table 2).

Table 2. Obstetric characteristics of respondents in Debre Berhan Town, North Shoa Zone, Ethiopia, 2017 (n=405)

Variables	Frequency	Percent (%)
Age at first pregnancy		
<20	119	29.4
20-34	285	70.4
>=35	1	2
Gravidity		
Primipara	194	47.9
Multipara	190	46.9
Grand Multipara	21	5.2
Parity		
One	119	29.4
Two	169	41.7
Three and above	117	28.9
ANC		
Yes	352	86.9
No	53	13.1
Frequency of ANC		
One	90	25.6
Two	57	16.2
Three	73	20.7
four and above	132	37.5
Place of delivery		
Home	108	26.7
Health institution	297	73.3
Health education During ANC		
Yes	298	84.6
No	54	15.4
Information of danger signs		
Yes	337	95.7
No	17	4.3
Source of information		
Health care providers	276	78.4
Relatives	20	5.7
Friends	29	8.3
Media	27	7.6

Knowledge about obstetric danger signs

Knowledge of respondents about obstetric complication was assessed by questions of danger signs related to pregnancy and childbirth. Out of 405 respondents 62.7%, 55.1% and 51.8% had good knowledge during pregnancy, labor and peurpuriuem respectively.309(76.3%), 160 (40.7%),140(34.6%) 134(33.1) and116(28.6) of the respondents spontaneously mentioned vaginal bleeding, swollen hand and face, severe headache, absence or reduced fetal movements and leakage of liquor per vagina as danger signs during pregnancy, respectively. The most commonly mentioned danger signs during labor and childbirth were excessive bleeding 271(66.9%), swollen hand and face 134(33.1), absence or reduced fetal movements 118(29.1) and placenta not delivered within 30 minutes after delivery of baby 106 (26.2%). The commonly mentioned danger signs of post-partum period were excessive bleeding 276 (68.1%), Foul smelling vaginal discharge 173 (42.7%) and swollen hand and face 116(28.6%) (Table 3, figure 1).

Table 3. Knowledge of respondents towards danger sign in Debre Berhan Town, North Shoa Zone, Ethiopia, 2017 (n=405)

Danger sign during pregnancy	Number	Percent %
Vaginal bleeding	309	76.3
Swollen hand and face	165	40.7
Blurring of vision	113	27.9
Severe headache	140	34.6
Excessive nausea and vomiting	122	30.1
Convulsion	71	17.5
Loss of consciousness	89	22.0
Leakage of liquor or gush of fluid pervagina	116	28.6
Reduced fetal movements	134	33.1
Anemia	147	36.3
Other	11	2.7
Danger sign during labor and delivery		
Vaginal bleeding	271	66.9
Swollen hand and face	134	33.1
Blurring of vision	84	20.7
Severe headache	84	20.7
Leaking of fluid from vagina 24hours before labor begin	111	27.4
Convulsion	77	19.0
Loss of consciousness	71	17.5
Severe pelvic or abdominal pain	84	20.7
Absence /reduced fetal movement	118	29.1
Placenta not delivered 30 minutes after baby born	106	26.2
Anemia	157	38.7
Others	16	3.9
Danger sign During peurpuriuem		
Severe vaginal bleeding	276	68.1
Swollen hand and face	116	28.6
Blurring of vision	93	23.0
Severe headache	82	20.2
Foul smelling vaginal discharge	173	42.7
Convulsion	75	18.5
Loss of consciousness	72	17.8
High fevers	96	23.7
Anemia	114	28.1
Other	18	4.4

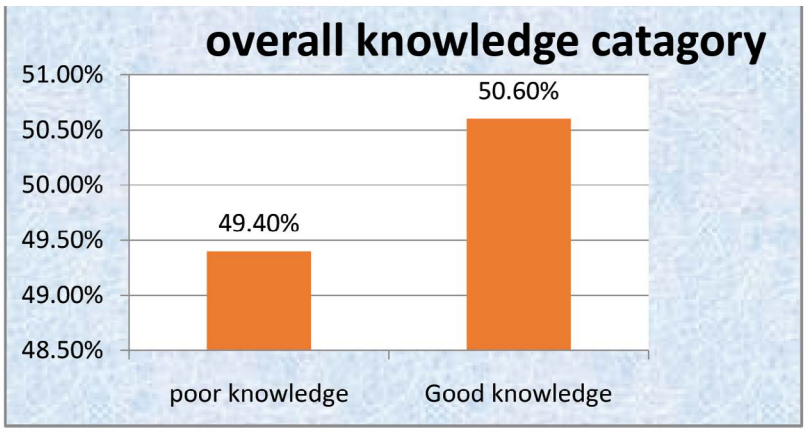

Figure 1. Over all knowledge of respondents towards danger sign in Debre Berhan Town, North Shoa Zone, Ethiopia, 2017 (n=405)

Risk perception towards obstetric danger sign

When asked about the seriousness of obstetric danger signs, 31.4% of respondents were perceived APH as slightly serious and 30.4% very serious obstetric danger signs. Regarding PPH majority 48.4% of participants perceived as a very serious, while 30.4% of them as serious obstetrics complication. Whereas high fever and foul-smelling vaginal discharge during postnatal period were perceived as slightly serious obstetrics complication by 39.8% and 37% of mothers respectively (Table 4, figure 2).

Table 4. Risk perception towards danger sign of respondents in Debre Berhan Town, North Shoa Zone, Ethiopia, 2017 (n=405)

Variables	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
	Not at all serious	Not serious	Slightly serious	Serious	Very serious
Bleeding during pregnancy	5(1.2%)	21(5.2%)	127(31.4%)	129(31.9%)	123(30.4%)
Pregnancy induced hypertension	9(2.2%)	50(12.3%)	126(31.1%)	117(28.9%)	103(25.4%)
Severe weakness	95(23.5%)	176(43.5%)	68(16.8%)	38(8.6%)	31(7.7%)
Premature rupture of membrane	42(10.4%)	138(34.1%)	122(30.1%)	63(15.6%)	40(9.9%)
Cessation or reduced fetal movement during pregnancy	8(2.0%)	49(12.1%)	143(35.3%)	132(32.6%)	73(18.0%)
Cessation or reduced fetal during labor	10(2.5%)	35(8.6%)	145(35.8%)	136(33.6%)	79(19.5%)
Cord presentation	7(1.7%)	120(29.6%)	110(27.2%)	112(27.7%)	56(13.8%)
Retained placenta	10(2.5%)	104(25.7%)	115(28.4%)	97(24%)	79(19.5%)
Post-partum hemorrhage	2(0.5%)	19(4.7%)	65(16%)	113(30.4%)	196(48.4%)
High fever during peurpuriuem	22(5.4%)	101(24.9%)	161(39.8)	103(25.4%)	18(4.4%)
Foul smelling vaginal discharge during peurpuriuem	10(2.5%)	126(31.1%)	150(37%)	90(22.2%)	29(7.2%)

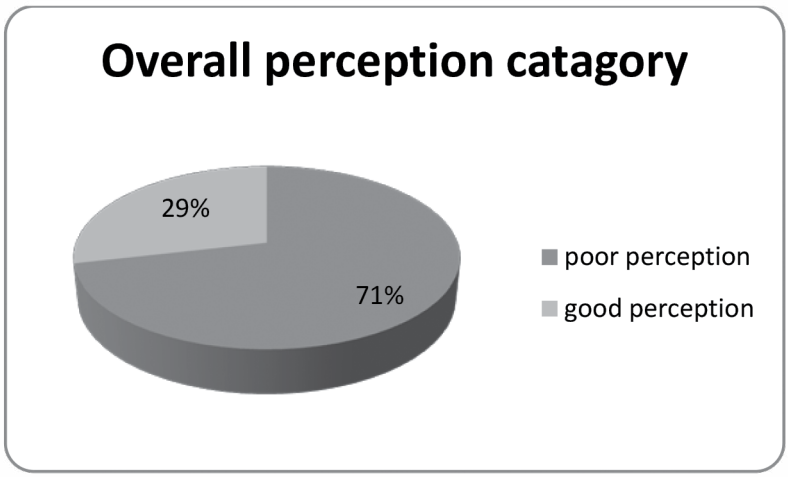

Figure 2. Over all perception of respondents towards danger sign in Debre Berhan Town, North Shoa Zone, Ethiopia, 2017 (n=405)

Factors affecting knowledge of obstetric danger signs

In bivariate analysis's educational status of mothers, residency, Gravidity, party, number of ANC visit and having information on danger signs were associated with Good knowledge to wards obstetric danger signs. Respondents having educational statuses of diploma and above were 4.85 times more likely Good knowledge to wards obstetric danger sign than those who cannot read and write [COR=4.85, 95%CI (1.52-15.53)]. Respondents who were from urban area were 1.72 times more likely Good knowledge towards obstetric danger signs as compared to those respondents who were from rural area [COR=1.72, 95%CI (1.04-2.85)]. Respondents who were pregnant 2-4 times were 2.28 times more likely Good knowledge to wards obstetric danger sign as compared to those respondents who were pregnant for first time [COR =2.28, 95%CI (1.51-3.43)]. Respondents who had given birth three times and above were 2.13 times more likely Good knowledge to wards obstetric danger sign than those mothers who had given birth for the first time [COR=1.13, 95%CI (1.266-3.577)] In multivariate logistic regression on both socio-demographic and obstetric history of respondents, confounding effect of one variable on the other variable were adjusted. Educational status, number of ANC visits and information on danger signs were found to be significantly associated with knowledge of obstetric danger signs at P-value of <0.05. Respondents with educational status of diploma and above were 7.26 times more knowledgeable than those who can't read and write [AOR=7.26, 95%CI (1.219-43.247)]. Those respondents who had a history of four and above ANC visits were 2.91 times more knowledgeable than those who had only one ANC visits [AOR=2.912,95%CI (1.27-6.681)]. Similarly, those who have heard about obstetric danger sign were 2.36 times more knowledgeable than those who had not ever heard obstetric danger signs [AOR=2.366, 95%CI (1.089-5.139)] (Table 5).

Table 5. Factors associated with knowledge of key obstetric danger sign during pregnancy among mothers in Debra Berhan Town, Ethiopia, 2017

Variable	Knowledge of danger sign		COR (95% CI)	AOR (95% CI)
	Poor	Good		
Educational status				
Can't read and write	20	10	1	1
Read and write	27	17	1.18(0.48-2.84)	0.62(0.16-1.99)
Elementary	51	40	2.35(1.01-5.48)	1.35(0.439-4.20)
Secondary	51	60	2.48(0.09-5.63)	1.57(0.47-5.23)
Diploma and above	71	88	4.85(1.52-15.53)*	7.26(1.219-43.217)*
Occupation				
Governmental employee	61	58	1.43(0.78-2.59)	1.08(0.46-2.54)
Merchants(private business	86	111	1.88(1.06-3.32)*	2.05(1.991-4.241)*
Housewife	48	32	1	1
Origin of residence				
Urban	153	174	1.72(1.04-2.85)*	0.58(0.298-1.141)
Rural	47	31	1	1
Gravidity				
1	116	78	1	1
2-4	75	115	2.28(1.515-3.431)*	1.49(0.764-2.933)
>4	9	12	1.983(0.798-4.929)	1.31(0.262-6.546)
Parity				
One	70	119	1	1
Two	83	86	1.48(0.922-2.377)	0.78(0.392-1.582)
≥3	47	70	2.128(1.266-3.577)*	0.85(0.332-2.206)
Number of ANC				
One	25	12	1	1
Two	39	18	0.962(0.396-2.333)	0.875(0.336-2.279)
Three	32	41	2.669(1.165-6.116)*	1.90(0.762-4.748)
Four and above	68	117	3.585(1.693-7.592)*	2.91(1.27-6.681)*
Having information on danger signs				
Yes	135	163	2.297(1.331-3.967)*	2.36(1.089-5.139)*
No	29	25	1	1

*=Statistically significant association at p-value <0.05

FACTORS AFFECTING PERCEPTION OF RESPONDENTS TO WARDS DANGER SIGN

In bivariate analysis's educational status of mothers, Gravidity, number of ANC visit and having information on danger signs were associated with perception towards obstetric danger sign. Respondents having educational statuses of diploma and above were 4.62 times more likely Good perception towards obstetric danger sign than those who cannot read and write [COR=4.62, 95%CI (1.34-15.94)]. Respondents who were pregnant 2-4 times were 1.63 times more likely Good perception towards obstetric danger sign as compared to those respondents who were pregnant for first time [COR =1.63 95%CI (1.04-1.55)]. Respondents who have information on obstetric danger sign were 4.16 time more likely Good Perception towards obstetric danger sign than those respondents who have no information to wards obstetric danger signs [COR=1.13, 95%CI (1.266-3.577)].

In multivariate logistic regression occupation, number of ANC visit and information about danger signs were found to be significantly associated with perception towards obstetric danger signs. Respondents who have had four and above ANC visit were 4.57 times more likely

good perceptions, than those who had only one ANC visits [AOR=4.575,95%CI (1.439-14.543)]. Additionally, respondents who have had heard about danger signs were 3.39 times more likely good perception than those who had not ever heard about Obstetric danger signs [AOR=3.395, 95%CI (1.059-10.884)] (Table 6).

Table 6. Factors associated with perception towards key obstetric danger sign during pregnancy among mothers in Debra Berhan Town, Ethiopia, 2017.

Variable	Perception towards danger sign		COR (95% CI)	AOR (95% CI)_
	Poor	Good		
Educational status				
Can't read and write	27	33	1	1
Read and write	22	2	0.818(0.125-5.339)	0.62(0.16-1.993)
Elementary	56	25	3.646(1.033-12.872)*	2.386(0.57-10.012)
Secondary	59	32	4.018(1.114-14.488)*	2.99(0.702-12.737)
Diploma and above	105	54	4.629(1.343-15.943)*	3.826(.885-16.538)
Occupation				
Governmental employee	83	36	2.096(1.006-4.369)*	1.113(0.429-2.884)
Merchant(private business)	130	67	2.197(1.085-4.45)*	1.543(0.681-3.497)
Housewife	67	13	1	1
Gravidity				
One	148	46	1	1
2-4	126	64	1.634(1.045-1.556)*	1.344(0.787-2.298)
> 4	15	6	1.287(0.472-3.08)	1.052(0.168-6.586)
Number of ANC visits				
One	33	4	1	1
Two	45	12	2.2(0.651-7.433)	2.658(0.737-9.584)
Three	48	25	4.297(1.368-13.499)*	4.21(1.243-14.223)*
Four and above	122	63	4.26(1.445-12.562)*	4.575(1.439-14.543)*
Health education				
Yes	24	94	2.304(1.082-4.908)*	1.584(0.658-3.811)
No	45	9	1	1
Having information about danger sign				
Yes	228	109	4.166(1.844-9.41)*	3.395(1.059-10.844)*
No	61 7	1	1	

*=Statistically significant association at p-value <0.05

DISCUSSION

This study attempted to assess knowledge, risk perception and associated factors towards obstetric danger signs among mothers in Debra Berhan town. Out of the total study participant 50.6% were knowledgeable about danger signs of pregnancy. This finding is higher than the same studies done in Debra Berhan public health institution, 38.6%[17], Egypt 26.0 %[18] Jordan. 15.2%[19], Uganda 19%[20]; however, it was lower than the findings of KwaZulu-Natal, South Africa 52%[21]. This difference might be due to the fact that socio-cultural difference and Difference in implementation of relevant health intervention programs.

In this study, about 309(76.3%) mentioned vaginal bleeding as danger sign during pregnancy and child birth 271(66.9%) during labor and 276(68.1%) during peurpuriuem which is higher than study in Aleta Wondo 45.9%[13] Debaytilatgin, District, Ethiopia 56.8 %[15]. Tsegedie District, Tigray 52.8%[14]. The discrepancy may be due to increasing up take of service and increasing the number of health care providers who provide education to mothers on obstetric danger signs. According to this study 62.7%, 55.1% and 51.8% mothers have good knowledge during pregnancy, labour and peurpuriuem respectively, which was higher than study done in Harare regional state and Debark district 28.6%, 28.6%, 40.9% and 47% and 45.7% respectively[22,23]. This difference could be due to deployment of health extension worker which strengthen the awareness of pregnant women toward ANC and institutional Delivery, and currently different media were promoting ANC visits and institutional delivery. In addition to this there was education campaign started in this district to better inform pregnant women about the potential danger sign that affects pregnancy outcome.

According to this finding bleeding during pregnancy 30.4%, Post-partum bleeding 48.4%, premature rupture of membrane 9.9%, Cessation or reduced fetal movement during pregnancy 18% and Cessation of fetal movement during labor were perceived as very serious obstetric danger signs. This is higher than study conducted in Pakistan which shows that 5%, 3% and 39% of respondents perceived absent/decreased fetal movement, premature rupture of membranes and bleeding as obstetric danger signs respectively[24]. The discrepancy might be due to sociocultural and the ways of health care delivery system.

The finding of this study revealed that respondents who have had diploma and above were 7.26 times more likely knowledgeable than those who can't read and write towards danger sign. The finding of this study is consistent with study done in Tanzania, Debaytelatigin District Sidama Zone, Debark North West Ethiopia[11,15,23].

In this study respondent who had a history of four and above ANC visits were 2.91 times more knowledgeable than those who had one ANC visits. This finding is consistent with study done in other part of Ethiopia[15,23]. Similarly, respondent who had heard about obstetric danger sign were 2.366 times more knowledgeable than those who had not ever heard obstetric danger signs. This is congruent with study conducted in Tanzania, Debaytelatigin District Sidama Zone, Debark North West Ethiopia[11,15,23].

The finding of this study raveled that those respondents who have had diploma and above were 3.71 times more likely good perception towards obstetric danger signs than others. Similarly, those respondents who have had information about danger signs were 4.20 times more likely good perception towards obstetric danger signs than others. In addition to this respondent who had a history of four and above ANC visits was 4.57 times more likely good perception towards obstetric danger signs than who had one ANC visits.

CONCLUSIONS

This study finding revealed that knowledge about obstetric danger signs of pregnancy poor. This specifies that many maternity care users are more likely to postponement in deciding to seek care. In this finding the most commonly mentioned danger signs during

pregnancy, labor and childbirth was sever vaginal bleeding followed by swollen hand and face. From this study finding it can be concluded that women knowledge on danger signs during pregnancy and child birth was exaggerated by their educational level, number of ANC visit and occupational status. In addition to this, women perceptions towards obstetric complications were affected by educational level, number of ANC visit and information about obstetric danger signs. Based on the finding we will be recommended that mobilizing community to increasing knowledge on obstetric danger sign and rick perception during pregnancy is very important. In addition to this advancing woman decision-making power, planning, and preparation for risk perception during pregnancy, labour and delivery and post natal period is very essential for reducing maternal mortality due to easily preventable maternal related complication. Similarly encouraging pregnant women to attend antenatal clinics and providing health information dissemination related to pregnancy danger sign and seeking behavior is also vital.

RECOMMENDATION

Based on the study findings, the researcher recommended that the Ministry of Health should put in place measures to intensify health education on danger signs in pregnancy to increase levels of knowledge among women, and to improve perception towards danger signs in pregnancy. The Ministry of Health should also work in conjunction other non-governmental organizations working with maternal and child health issue so as to improve maternal and child health. The researcher recommended that another research should be done on women's knowledge and perception of danger signs in pregnancy in both urban and rural area because this study focused only urban areas.

DECLARATIONS

Ethics approval and consent to participant

Ethical clearance was obtained from Debra Berhan University, College of Health Science Institutional Ethical Review Board. Support letter was obtained from department of midwifery to Debra Berhan city Administration. Then again Debra Berhan city Administration wrote letter to selected kebeles. Informed verbal consent was obtained from the study subjects and for those participants under the age of 18 based on Ethiopian constitution parental assent was secured after the data collectors explained the study objectives, procedures and their right to refuse not to participate in the study. Furthermore, confidentiality of the study subjects was assured.

AVAILABILITY OF DATA AND MATERIALS

The datasets used and/or analyzed during the current study available from the corresponding author on reasonable request.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

BN was involved in the conception, design, analysis, interpretation, report and manuscript writing. SH and BW were involved in the design, analysis, interpretation and report writing. All authors read and approved the final manuscript.

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