

Awareness and its Associated Factors of Obstetric Fistula among antenatal care attendees in Injibara Town Health Institutions, Awi Zone, North West, Ethiopia, 2019.

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Abstract

Background Obstetric fistula is abnormal passage way between the vagina and bladder or rectum and it has the most devastating effects on physical, social and economic levels and represents a major public health issue of thousands of women, which failed to provide accessible and appropriate intrapartum care for women within developing country, particularly in Ethiopia. Therefore, we tried to assess the awareness and its associated factors of obstetrics fistula among pregnant mothers attending antenatal care clinics.

Method A health institutional based cross-sectional study was employed from March 4–29/2019 among 413 pregnant women. The data was collected by systematic random sampling technique and entered into a computer using Epi data 3.5, edited and analyzed using Statistical Package of Social Sciences 23.0 version. Bivariate and multivariate logistic regression analyses was employed to estimate the crude and adjusted odds ratio with confidence interval of 95% and p value of less than 0.05 considered statically significant.

Results The study identified that 39.5% with 95% confidence interval (34.6-44.6%) of pregnant women were had good awareness about obstetrics fistula. Multivariate logistic regression analysis showed that, living in urban AOR=1.98, 95% CI=1.07-3.69], attending formal education [AOR=2.11, 95%CI=1.06-4.12], having history antenatal care [AOR=3.87, 95%CI, =1.60-9.68] and childbirth at health institution [AOR=7.10, 95%CI=2.52-2.02] were have a positive association with awareness of obstetrics fistula. On the other hand, occupation of the respondents: house wife [AOR=0.30, 95% CI=0.16-0.57] and merchants [AOR= 0.41, 95% CI=0.20-0.91] were have a negative association with awareness of obstetrics fistula.

Conclusion This study showed that awareness of obstetrics fistula was low. Residency, education and occupation of the women, having history of antenatal care and childbirth at health institution was significantly associated with awareness of obstetrics fistula. Still there is a gap on awareness of obstetrics fistula; therefore, it is good to emphasis on providing information on maternal health care issues, particularly about obstetrics fistula.

Background

Obstetrics fistula is a complication that arises from prolonged or obstructed labor without prompt medical care which causes tissue necrosis resulting in a hole between the vagina and bladder or rectum, or both[1].

It is a public health issue for women and their communities within developing settings, particularly in Africa and Southeast Asia. Of which signifies a health system that has failed to provide accessible, timely and appropriate intrapartum care [2, 3].

Globally, around two million, women living with untreated fistulas and yearly there are between 50,000 to 100,000 new cases of OBF develop worldwide. Of these around 33,000 women live in Sub-Saharan Africa

and it affects about 1.57 per 1,000 women in Sub-Saharan Africa and 1.62 women per 1000 reproductive age in Ethiopia[4].

In prolonged obstructed labor vaginal, bladder, and rectal damage results from compression of the maternal tissue by the fetus during repeated uterine contractions that restrict blood flow, resulting in ischemia and tissue and which results in continuous and uncontrolled leakage of urine[5].

OBF primarily affects lower socioeconomic classes, who are underprivileged, un/or underemployed, and have limited access to safe delivery attended by qualified health personnel[6].

The underlying factors contributing to obstetrics fistula (OBF) include no skilled birth attendants, poor health seeking behavior, poor referral systems and transportation network, inadequate facilities providing comprehensive obstetric care services, poverty, malnutrition, lack of education, early marriage and childbirth, harmful traditional practices, sexual violence, and lack of good quality or accessible maternal and health care[7–10].

To 2016, Ethiopian Demographic Health Survey (EDHS) the national prevalence of obstetric fistula is less than 1% among ever-married women. The highest prevalence(0.7%) occurs in the Amhara region[11].

OBF is treatable by surgery, by giving palliative care and can be prevented completely through timely access to competent emergency obstetric care as providing support from trained health care professionals throughout pregnancy, use of pantograph in all labor, providing access to family planning, promoting the practice of spacing between births, and postponing early marriage and by educating the communities and promoting education for girls are the key factors to prevent in long term[2,3,4,12].

Methods

Study area

The study was carried out in Injibara town which is found in the southwestern part of the Amhara region and north western part of Ethiopia. The town is located about 447 km away from the capital of Ethiopia, Addis Ababa and 118 km Amhara regional state Bahir Dar city. Injibara is the administrative town of Awi zone. The town has five Kebeles with the population of 46,745 (23,466 females and 23,279 are males). The town has 2 governmental health facilities [13].

Study design and period

A health facility based cross-sectional study was conducted from March 4–29/2019 in Injibara town, Awi zone, Ethiopia.

Source of population

All pregnant women who came to attend ANC at all government health facilities in Injibara town.

Study Population

Pregnant women who attended ANC at selected governmental health facilities in Injibara town.

Inclusive criteria

Pregnant women who were attended ANC in the governmental health facility at Injibara town.

Exclusive criteria

Pregnant women who had seriously ill.

Operational Definition

Good awareness = those respondents who scored 50% or more (answered correctly for 2 or more) of the question related to OBF [3].

Poor awareness = those respondents who scored less than 50% of the question related to OBF [3].

Obstetrics fistula: are an opening in the wall of the vagina connecting to the bladder or rectum due to prolonged or obstructed labor[14].

Sample Size Determination

The sample size was determined by using a single population proportion formula which took the following assumptions into considerations: the proportion of awareness on VVF among pregnant women was 57.8% [15], 5% level of significance ($\alpha = 0.05$) and 5% margin of error ($\omega = 0.05$). The final sample size was adjusted by adding 10% non response rate thus turned out to be 413.

Sampling procedure and technique

All governmental health facilities were considering. Information about the client flow to each health facility was obtained from Awi zonal health bureau (16).The average client flow of the health facilities was taken from a registry book of the health facilities. The numbers of pregnant women who has attended ANC quarterly in Injibara general hospital was 1320 and in Injibara health center was 2280. The total sample size was proportionally allocated for each governmental health facility of the town based on their quarterly ANC flow. For each health institutions the first participant selected randomly; then the subsequent participants were selected by systematic sampling technique every two interval for each health facilities.

Data collection tools and procedures

Structured interviewer administered questionnaire was used to collect the data which was adapted from relevant literatures and modified to local context[3], [15]. Questionnaires was first prepared in the English language then it was translated first in to Amharic and then to Awigni by an individual who has good

ability of this languages then retranslated back to first to Amharic and then too English to check consistency. The questionnaire was consisting of Socio demographic characteristics, Reproductive and obstetrics characteristics, and knowledge and prevention method's related questionnaires (additional file 1). Pre-tested, structured interviewer administered questionnaire was used for data collection purposes. The data was collected by two diploma midwives and supervised by two BSc midwives by those who can speak and write the local language.

Data quality assurance

The collected data were checked for the completeness, accuracy, clarity, and consistency after conducting pre-test. A pre-test was conducted on 5% or 21 pregnant mothers in one of the health centers out of the study area called Lideta health center and the instrument was amended accordingly. Any error, ambiguity, or incompleteness identified was corrected immediately. The data collectors were trained for one day about the contents of the questionnaire, methods of data collection and aim of the study. The data collection process was supervised by the supervisor and the investigator throughout the data collection period.

Data processing, Analysis and Interpretation

Data was coded, cleaned and entered by Epi.Data version 3.5 and analyzed using computer database software and transported to the SPSS version 23 statistical software. Descriptive statistics like frequencies and percentages was used to present the categorical independent variables, and mean/standard deviation was used to describe a continuous variable. Frequency tables and graphs were used to present descriptive results.

For this study, bivariate logistic regression model was fitted as most method of analysis. Odd's ratios (OR) was computed with the 95% confidence interval (CI) to see the awareness of OBF for the considered associated factors in this research. Independent factors, with a P-value <0.2 obtained in the Bivariate logistic regression were entered into the multivariate logistic regression models. Consequently, most important associated factors were identified using the multivariate logistic regression analysis. Then, an adjusted odds' ratio (AOR) with 95% confidence interval was calculated for the most predictive variables, and statistical significance was accepted at (P< 0.05).

Results

Socio-demographic characteristics of the respondents

A total of 413 women participated in the study with a response rate of 100%. The mean age of the study participants was 26.60 years with (\pm SD = 5.072) and ranging from 15–40 years. About 41.2% were found in the age group 20–25 years. Around 67.6% of participants were belongs to Agew ethnicity and 83.7% were orthodox Christianity religion followers. Of the study participants 60 % were house wife. From the

participants 30.2% were attended primary school and 34.6% husbands of the respondents had diploma and above educational levels (*Table 1*).

Obstetrics characteristics of the study participants

From total participants' 81.5% were married at age of greater than eighteen and 89.6% of them were got pregnant first at the age of greater than eighteen with the median age of 20 years. With parity of the total participants 39.0% of the participants' were nullipara. Among multipara 66.8% were had no history of abortion and 63.4% had history of ANC follow up in their previous pregnancy. Among those who had history of birth 65.9% were given their most recent childbirth at health facility (*Table 2*).

Current awareness of obstetrics fistula

In this study, 163 (39.5%) of the participants were had good awareness about OBF. The risk factors, symptoms of OBF and availability of OBF treatment methods identified by 175 (42.4%), 135 (32.7%) and 92 (22.3%) of the participants respectively (*Table 3*).

Determinants of awareness of obstetrics fistula

Bivariate analysis was done to asses any relation between independent variables and awareness of obstetrics fistula.

In bivariate analysis: age, residency, education status of the respondents, age at first marriage, age at first pregnancy, parity, history of ANC, place of delivery, utilization of PNC and utilization of modern FP were considered statistically significant with awareness of obstetrics fistula.

Multivariable logistic regression analysis showed that participants who lives in urban were 1.98 times more likely aware of OBF than who lives in rural [AOR = 1.98, 95% CI = 1.07–3.69] Likewise respondents who attend formal education were 2.11 times more likely aware of OBF than who didn't attend [AOR = 2.11, 95% CI = 1.406–4.12]. Respondents who had history of ANC follow up were 3.87 times more likely aware of OBF than who hadn't history of ANC follow up [AOR = 3.87, 95% CI = 1.60–9.38]and those who gave birth in health institution were 7.10 times more likely aware of OBF than who gave birth at home [AOR = 7.10, 95% CI = 2.52–20.02](*Table 4*).

Discussion

In this study less than half (39.5%) with 95% of (CI = 34.6–44.6%) of the participants were had good awareness about OBF. This result was lower than studies in Northern Ghana, Nigeria and, Tanzania were (45.8%,57.8% and 60.1%) [17][18, 15] respectively. The different might be; the study in Ghana was done on the age group of 17–60 years so that the difference might be the age of the respondents, as well as that study was done by including both pregnant and non pregnant women therefore, the difference might be because of including diverse study population. The different with a study in Nigeria may be attributed to the sampling methods as that data was collected by convenient methods. While the study in Tanzania

was conducted at the community levels, it might be helped them to get respondents which had more awareness about OBF, so that the difference might be the study participants. Additionally, it was done by including both qualitative and quantitative approaches, these approaches might be helped them to get more information by asking deeply about OBF, therefore, the difference might be approaches of the study.

The awareness levels in this study is in line with a study in Burkina Faso(36.4%)[3].The closeness of this result might be due to as both studies done in developing country and may have related level of awareness.

The figure in this study is in line with 2016, EDHS (39%)were reported as they had heard about OBF at national levels[12].This closeness of the result might be due to the same socio-demographic characteristic of the respondents and may be due to closeness of the study period.

In this study, socio-demographic and obstetric factors were related to awareness of OBF. The odds of having awareness about OBF was higher among respondents who are lives in urban were approximately two times higher than who are lives in rural [AOR = 1.98, 95% CI = 1.07–3.69]. This finding agree with a study done in Burkina Faso were urban residency more aware of OBF than rural residency[3].This might be due to urban women were more availability of information access,easily accessibility of facility and accessibility of education than rural women.

The odds of having awareness about OBF was higher among respondents who attend formal education were two times higher than who didn't attend formal education [AOR = 2.11, 95% CI = 1.06–4.12]. The finding in this study agree with to studies done in Burkina Faso and Northern Ghana [3][17].This might be those attending formal education have greater opportunity to get information, asking and getting health services than those who hadn't attended formal education.

The odds of having awareness about OBF was higher among study participants who had history of ANC follow up in their previous pregnancy were approximately four times higher than who hadn't had ANC follow up in their previous pregnancy [AOR = 3.87, 95% CI = 1.60–9.38]. To my knowledge concerned, this is the first report and there are no other studies that support this study. The possible reason might be attributed to that utilization of maternal health care services have greater opportunity to get exposed to health education and to dissemination structured and targeted message on the health of women and utilization of ANC services were may help them to get information about OBF.

In this study awareness about OBF was higher among study participants who had gave birth at health institution were seven times higher than those who gave birth at home [AOR = 7.10, 95% CI = 2.52–20.02].To my knowledge concerned, this is the first report and there are no other studies that support this study. The most possible reason might be that women who had history of maternal and health care services utilization would have high chance of getting information from health personnel in the form of health education or counseling about OBF.

Conclusion

In this study, pregnant women who had good awareness about OBF were lower than a study done in Nigeria. Residency, educational levels of the respondents, having history of ANC and place of delivery were having positive association with awareness of OBF. While occupational levels of the respondents have negative association with awareness of OBF.

Abbreviations

ANC: Antenatal Care *EDHS*: Ethiopian Demography Health Survey

FP: Family Planning *OBF*: Obstetrics Fistula *VVF*: Vesico Vaginal Fistula

Declarations

Ethics approval and consent to participate

Ethical clearance was obtained from the institutional review board of Bahir Dar University. A formal letter request of cooperation was written to Injibara health office. Written consent was obtained from each study participants for those ages greater than 16 years and from parents for those ages less than 16 years. Confidentiality of information and privacy was maintained.

Consent for publication:

Not applicable

Availability of data and materials:

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

Competing Interests

The authors declare that they have no conflict of interests regarding the publication of this paper.

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Authors' Contribution

FB, WF and AN inception designed the protocol, data analysis, interpretation, manuscript drafting, wrote the paper and revised the manuscript. WF and AT participates on the data collection, the editorial and data entry and analysis. All authors read and approved the final paper.

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Tables

Table 1: Percentage distribution of the study participants by Socio-demographic characteristics in governmental health facilities of Injibara town, North West Ethiopia, 2019, (n=413).

Variables		Frequency (No)	Percentage (%)
Age	15-19	24	5.8
	20-25	170	41.2
	26-30	148	35.8
	31-35	45	10.9
	36-40	26	6.3
Ethnicity	Agew	279	67.6
	Amhara	116	28.1
	Others*	18	4.3
Residency	Urban	295	71.4
	Rural	118	28.6
Religion	Orthodox	346	83.7
	Muslim	56	13.6
	Protestant	11	2.7
Marital status	Married	410	99.3
	Single	3	0.7
Educational levels of the respondents	Had not attended regular education	108	26.2
	Primary school	125	30.2
	Secondary school	94	22.8
	Diploma and above	86	20.8
Occupational status of the women	Government employee	58	14.0
	House wife	248	60.0
	Merchants	83	20.1
	Others**	24	5.9
Educational levels of the respondents' husband (n=410)	Had not attended regular education	54	13.2
	Primary school	115	28.1
	Secondary school	99	24.1
	Diploma and above	142	34.6
Occupational status of the husband (n=410)	Government employee	99	24.1
	Farmer	87	21.2
	Private organization employee	40	9.8
	Merchants	146	35.6
	Car driver	23	5.6
	Others***	15	3.7

* (Oromo and Gumze), ** (student, private organization employee and day labourer) , *** (carpenter and day labourer)

Table 2: Percentage distribution of the study participants by reproductive and obstetrics characteristics in governmental health facilities of Injibara town, North West Ethiopia, 2019 (n=413).

Variables		Frequency (No)	Percentage (%)
Age at first marriage n=410)	<18	73	17.5
	>=18	337	81.5
Age at first pregnancy	<18	43	10.4
	>=18	370	89.6
Gravidity	Primigravida	148	35.8
	Multigravida	265	64.2
Parity	Nullipara	161	39.0
	Primipara	84	20.3
	Multipara	117	28.4
	Grand multipara	51	12.3
History of abortion (n=265)	Yes	88	33.2
	No	177	66.8
History of ANC follow up in previous pregnancy (n=265)	Yes	168	63.4
	No	97	36.6
Age at first childbirth (n=252)	<18	25	9.92
	>=18	227	90.08
Place of delivery for the most recent childbirth (n=252)	Health institution	166	65.9
	Home	86	34.1
Mode of delivery for the most recent child birth (n=252)	Spontaneous vaginal delivery	182	72.2
	Instrumental delivery	45	17.1
	Caesarean section	27	10.7
Attendant of the labour (n=252)	Health workers	166	65.9
	TBA	47	18.7
	Family	39	15.4
History of PNC utilization (n=252)	Yes	55	21.8
	No	197	78.2
Utilization of FP before the current pregnancy	Yes	254	61.5
	No	159	38.5
Numbers of ANC follow up on the days of interview	1	170	41.2
	2	122	29.5
	3	71	17.2
	>=4	50	12.1

Table 3: Distribution of the study participants according to awareness of obstetrics fistula in governmental health facilities of Injibara town, North West Ethiopia, 2019, (n=413).

Variables	Frequency (No)	Percentage (%)
Awareness		
Good awareness	163	39.5
Poor awareness	250	60.5
Source of information		
Media	65	32.5
Health professional	80	40
From school	32	16
Others*	23	11.5
Awareness of obstetrics risk factors		
Yes	175	42.4
No	238	57.6
Risk factors of obstetrics fistula		
Female gentile mutilation	121	29.3
Early marriage	144	34.9
Early pregnancy	139	33.6
Unspaced childbirth	86	20.8
Prolonged labour	137	33.2
Home delivery	153	37.1
Malnutrition of the mothers	63	15.3
Not using FP methods	99	24.0
Awareness of symptoms of obstetrics fistula		
Yes	135	32.7
No	278	67.3
Symptoms of obstetrics fistula		
Urinary incontinency	134	32.5
Faecal incontinency	70	17.0
Vulvar irritation	47	11.4
Awareness of availability of obstetrics fistula treatment		
Yes	92	22.3
No	321	77.7

*Indicates that (family and friends)

Table 4: Logistic regression analysis for awareness of obstetrics fistula among study participants in governmental health facilities of Injibara town, North West Ethiopia, 2019.

Variables		Awareness of OBF		Crude OR(95%-CI)	Adjusted OR(95%-CI)	P - value
		Yes	No			
Age of the respondents	15-19	6	18	1	1	
	20-25	82	88	2.80(1.06-7.39)	2.75(0.98-7.68)	0.054
	26-30	62	86	2.17 (0.81-5.76)	2.68(0.86-8.36)	0.088
	>=31	13	58	0.67 (0.22-2.03)	1.12(0.29-4.31)	0.870
Residency	Rural	20	98	1	1	
	Urban	143	152	4.61(2.71-7.85)	1.98(1.07-3.69)	0.030
Educational levels of the women	No-formal education	17	91	1	1	
	Attended formal education	146	159	4.92 (2.808.65)	2.11(1.06, 4.12)	0.034
Age at first marriage	<18	14	59	1	1	
	>=18	148	189	3.30(1.77-6.14)	1.02 (0.43-2.40)	0.973
Parity	Nullipara	76	85	1	1	
	Primipara	48	36	1.49(0.88-2.54)	1.96 (0.48-8.02)	0.347
	Multipara	33	84	0.44(0.26-0.73)	1.07(0.31-3.76)	0.917
	Grand multipara	6	45	0.15(0.06-0.37)	1.08 (0.31-.3.78)	0.903
Age at first pregnancy	<18	8	35	1	1	
	>=18	155	215	3.15(1.42-6.99)	0.93 (0.26-.3.35)	0.914
ANC in previous Pregnancy	No	9	88	1	1	
	Yes	82	86	9.32(4.41-19.73)	3.87 (1.60-9.38)	0.003
Place of delivery	Home	5	81	1	1	
	Health institution	82	84	15.81(6.10-41.02)	7.10(2.52-20.02)	0.000
Postnatal care	No	54	143	1		
	Yes	33	22	3.97 (2.13-7.41)	1.34(0.61-2.91)	0.467

FP methods utilization	No	43	116	1	1	
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