Fear of child birth and associated factors among pregnant mothers who attend antenatal care service at Jinka public health facilities, Jinka town, Southern Ethiopia

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Abstract

Background

Women face many challenges from conception to postpartum and fear of childbirth is one of the challenges the women encounters during pregnancy. This could have been resulted from different perspectives and it could intern lead to various pregnancy and child birth problems. Thus, understanding child birth fear and factors associated with this is of paramount importance and this study was aimed at addressing this issue.

Methodology

A facility base cross sectional study was done on 423 pregnant mothers who came for antenatal care services at Jinka hospital and Jinka health center. The study was conducted from June 01 to 30, 2018. Sample size was calculated using single population proportion formula and samples was taken after proportional allocation was done for the hospital and health center using proportion allocation formula. Individual participants were selected with systematic sampling technique using k- value of 2 for both the hospital and health center and the first participant was selected by lottery method from the first two samples. Data were entered in to epi-data version 3.1.1.and exported in to statistical packages for social sciences version 21.0 for cleaning and further analysis. Level of significance was declared at p-value less than 0.05 in multivariable logistic regression model. Narratives, figure and tables were used to put the result.

Result

From 423 samples, two of the questionnaires were incomplete and thus 421 were used for analysis giving a response rate of 99.5%. Around a quarter of 102 (24.2%) mothers had fear of child birth and the remaining 319 (75.8%) had no fear of child birth. From the factors under consideration, history of previous pregnancy complication, previous history of labor and delivery complications, educational status and depression status were significantly associated with mother's fear of child birth.

Conclusion

Even though it is physiological to have some fear of child birth, the figure obtained is relatively higher. Factors found to have significant effect on child birth fear are those which could be tackled through improved health literacy and integrated maternal health services

Introduction

Women face many challenges from conception to postpartum and fear of childbirth (FOC) is one of the challenges the women encounters during pregnancy and it can be an important source of distress for pregnant women, their family and their caregivers(1).Childbirth fear can be described as feelings of uncertainty and anxiousness before, during, or after the delivery by thinking labor and delivery(2). Fear of

childbirth is common health issue for women and their caregivers when mothers are reaching to birth or are in their postpartum transition and varies from individuals ranging from negligible to extreme fear(1).

Pregnant women who fear childbirth are prone to face a lot of negative impact on physical and psychological wellbeing such as complications during pregnancy, to experience more severe pain, increased length of labor, use of anesthesia during labor and increased risk of caesarean section deliveries (3). Fear of childbirth may also associated with different psychological or clinical problems such as fear of undergoing a caesarean section, rupture, death, episiotomy, feeling helpless, lack of trust in the health workers, feeling of being alone, becoming panicked, (4, 5). It also has a negative influence on the postpartum period. Mothers with childbirth fear are more likely to have difficulties with maternal adjustment(6) and mother-child bonding(7). It can also cause or worsen post-traumatic stress disorder and leads to avoidance of pregnancy, maternal and fetal stress.(4, 8).

Globally, the prevalence of fear associated with childbirth is often reported to be around 20% (estimated to range from 7.5 to 27% during pregnancy (9, 10). Different factors are associated with fear of childbirth like previous negative birth experience, parity, educational status, being unemployed, receiving low emotional support from husband, unwanted pregnancy(2, 5, 11, 12).

Even though fear of childbirth is common problem with multiple consequences, most studies were conducted in high-income countries, and little is known in low-income countries including Ethiopia. Ethiopia is doing a lot to decrease maternal and neonatal morbidity and mortality and to achieve sustainable developmental goals (13). But a little concern is given on the psychological aspects of pregnancy and child birth and the possible factors associated with fear of child birth. So identification of women at risk of childbirth fear is essential for women's emotional well-being before and after birth. Thus, this study was aimed to assess childbirth fear and factors associated with it at Jinka public health institutions.

Methods And Materials

Study design and population

Institutional based cross-sectional study design was conducted in Jinka town public health facilities, South Omo zone from June 01 to June 30, 2018. South Omo is a zone in the Ethiopian Southern nations, nationalities and peoples region, which is bordered on the south by Kenya, on the southwest by the Ilemi Triangle, on the west by Bench Maji, on the northwest by Keffa, on the north by Konta, Gamo Gofa and Basketo, on the northeast by Dirashe and Konso, and on the east by the Oromia Region. The administrative center of south Omo zone is Jinka town. The town has two public health institutions, one health centers and one general hospital. In the hospital there are two psychiatric nurses who provide psychiatric care in outpatient for those having psychiatric problem. Pregnant women who came for antenatal care service in the study period at Jinka public health facilities were eligible to participate in the study and pregnant women who were critically ill were excluded in the study. For eligible participants who

were above age 18, written consent was taken and for participants who were under the age of 18 written consent was taken from their parents.

Sample size determination and Sampling technique

To get the actual sample size, different sample sizes were calculated based on the objectives.

The required sample size was determined using a formula for single population proportion $n = (Z\alpha/2)^2 p(1-p)/d^2$, as shown in the table below.

Where; n = Minimum sample size for a statistically significant survey, z = is the significance level (at 5% significance level its value is 1.96), p = 0.5, d = is the margin of error (It has been taken as 5%). Sample size was allocated proportionally to the hospital and the health center using population proportion formula. i.e. $n_i = N_i * n / N$, where, n_i = sample for the specific proportion, N_i = total population of a specific proportion, n = total samples to be included in the study and N = total source population. Hence, samples from the hospital = $600 * 423 / 900 = 282$. Samples from the health center = $300 * 423 / 900 = 141$. Finally 423 pregnant women were included in the study.

Regarding to the sampling technique, there are two public health institutions in Jinka town, one health center and one general hospital. According to their last year June 01 to June 30 ANC service report, 600 pregnant mothers get ANC service in the hospital and 300 pregnant women in health center. Samples were allocated to each public health institutions based on proportional allocation to sample size. By considering last year June 01 to June 30 report as a sample frame (N) which is 900 pregnant women, Systematic sampling technique was used to identify the study unit to participate in the study. The eligible attending respondents were recruited in order of their coming for antenatal service during each day. The first study participant was selected by lottery method using their card number, then every k value ($k = N/n = 900/423 = 2$, where N is sample frame, n is sample size for this study and k is regular interval between study participants) were selected based on their order of entry for ANC follow up until reach 423 samples.

Study variables

Dependent variable

Fear of child birth

Independent variables

Socio demographic characteristics: Age, Marital status, Educational status, Residence Occupation, Income, and Family size

Obstetric and other health related variables: Gravida/ Para, trimester of pregnancy, Current pregnancy complications, History of abortion, history of still birth, previous pregnancy related complications, previous labor and delivery complication, and chronic medical illness.

Psychosocial support: Oslo social support scale, husband feeling on pregnancy

Substance use: Chat, and Alcohol

Previous depression history: history of depression and family history of depression

Operational definition:

Fear of Childbirth - Feelings of uncertainty and anxiousness arise from the woman's anticipation or experience of being captured in a situation where she faces the approaching delivery, which is unknown, uncontrollable and lead the woman to distress; and WDEQ scores more than 84 (2, 14)

Antenatal care attended: Pregnant women who had attended antenatal clinics during the recent pregnancy at least once.

Antenatal depression: A pregnant women who have mood disorder and scoring 16 or more in beck depression inventory scale(15).

Beck's Depression Inventory: Is a tool which contains 21 questions each with four possible responses. Each response assigned a score ranging from 0 to 3. The overall value of the scale ranges from 0 to 63, and a pregnant mother with a score of 15 and less was considered as normal while a mother with BDI score of 16 and more was considered as depressed (15, 16).

Oslo social support scale: is a three item question which used to assess psychosocial distress. The sum ranging from 3 – 14 and interpreting as a score of 3-8 (poor support), 9-11 (moderate support) and 12-14 (strong support) (17).

Data collection method and instruments

Data was collected using semi-structured and pretested questionnaire through face to face interview. Questionnaire was first prepared in English language and translated into Amharic (the local language in the study area) and then translated back to English in order to ensure its consistency. The Amharic version was used for data collection. The questionnaire includes socio demographic characteristics, obstetric history, depression history, substance use, psychosocial and Beck Depression Inventory (BDI) which is a depression screening tool for assessment of depression condition. Four diploma and two Bachelor Science (BSc) nurse professionals who didn't work in the ANC clinic were selected for data collection and supervision respectively. One day training was given for both data collectors and supervisors about the methodology and questionnaire by the investigators. Data was collected after study participants got ANC services.

Data quality assurance

Data quality was assured before, during and after data collection. Prior to actual data collection, the questionnaire was first prepared in English language and translated into Amharic and then translated

back to English in order to ensure its consistency. Pretest was done on 5 %(22) of the sample size in Arba Minch general hospital to determine clarity, adequacy, and efficiency of the questionnaire and corrections and modifications taken according to the result and one day training was given for data collectors and supervisors about the methodology and questionnaire by the investigator.

During data collection period the purpose of data collection and importance of the study was informed to the participants in order to generate quality data and the collected data were checked for completeness and consistencies by trained supervisors and investigator through close follow up and necessary corrective action were taken accordingly. In addition data collectors were always check participants appointment date on the participant's card to avoid repeated visit. After data collection, the collected data were rechecked for completeness and consistencies by investigator.

Data processing and analysis

Data was entered in to Epi data version 3.3.1 software after coding and checking their completeness and exported to statistical package for social science (SPSS) version 20.0 for analysis. Descriptive analysis (frequencies, percentage, means and standard deviations) was computed to explore socio-demographic, obstetric and other health related characteristics, depression history, substance use and psychosocial characteristics of study participants. Binary Logistic regression was used to find out association between fear of child birth and explanatory variables. Explanatory variables which had P-value less than 0.25 and fulfill the assumption of logistic regression from bi-variable logistic regression were considered for the multi-variable logistic regression model. The model goodness of fit was tested by using Hosmer-Lemeshow and Omnibus test and p-value was 0.447 and 0.000 respectively. Strength of association was evaluated using odds ratio at 95% confidence interval and P-value < 0.05 was considered to declare significant associations.

Results

Socio demographic characteristics

A total of 423 pregnant women were considered to be involved in this study. But, there were two incomplete questionnaires giving a response rate of 99.5%. The mean age of the study participants was 24.16 ± 4.43 SD years. Regarding family size 296(70.5%) of participants had small family size and 35(8.3%) had large family size while other 89 (21.2%) participant had average family size with minimum 1, maximum 9 and mean 3.8 ± 1.68 SD. The rest socio-demographic characteristics are listed in table one below.

Table 1
Socio demographic characteristics of pregnant mothers at Jinka public
health facilities, June 2018, Southern Ethiopia

Socio-demographic characteristics		Frequency	Percentage
Age	15–19	54	12.8
	20–24	182	43.2
	25–29	128	30.4
	30–35	44	10.5
	≥ 35	13	3.1
Religion	Orthodox	160	38.0
	Protestant	198	47.0
	Muslim	53	12.6
	Catholic	10	2.4
Occupation	House wife	252	59.9
	Merchant	57	13.5
	Government employed	74	17.6
	Daily workers	13	3.1
	Student	11	2.6
Educational status	Unable read and write	120	28.5
	Grade 1–8	146	34.7
	Grade 9–12	83	19.7
	College or university	72	17.1
Marital status	Married	400	95.0
	single	10	2.4
	Separated/divorced	7	1.7
	Widowed	4	1.0

Obstetric and other health related characteristics

In this study participants had an average of 2.58 pregnancies with minimum 1 and maximum 9. And 386 (91.7%) of current pregnancies were wanted. On the other hand, 44 (15.3%) of pregnant women had history of abortion and 35 (81.4%) were aborted spontaneously. The rest are listed in table two below.

Table 2
Obstetric and other health related characteristics of pregnant mothers at Jinka public health facilities, June 2018, Southern Ethiopia

Variables		Frequency	Percentage
Gravida	1	134	31.8
	2–4	237	56.3
	5 and above	50	11.9
Parity	Primipara	134	31.8
	Multipara	287	68.2
Trimester of pregnancy	First	56	13.3
	Second	167	39.7
	Third	198	47.0
Planned pregnancy	Yes	386	91.7
	No	35	8.3
History of abortion	Yes	44	15.3
	No	243	84.7
Onset of abortion	Spontaneous	35	81.4
	Induced	8	18.6
Complication in current pregnancy	Yes	1	0.2
	No	420	99.8
Complication in previous pregnancy	Yes	19	6.6
	No	270	93.4
Complication in previous labor and delivery	Yes	16	5.6
	No	272	94.4
Presence of chronic medical illness	Yes	20	4.8
	No	401	95.2

Diagnosed history of depression

Four hundred seventeen (99.0%) study participants had no previous history of depression and only four of the study participants had history of depression. Similarly 417(99.0%) study participants had no family history of depression and only four of the study participants had family history of depression.

Psychosocial factors and substance use history of participants

Three hundred fifty (83.1%) participants had strong social support and 102(24.2%) had fear of pregnancy, labor and delivery related complication.

Table 3
Psychosocial factors and substance use history of pregnant mothers at Jinka public health facilities, June 2018, Southern Ethiopia

Variables		Frequency	Percentage
Oslo social support scale	3–8 (poor)	7	1.7
	9–11 (moderate)	64	15.2
	12–14 (strong)	350	83.1
Husband feeling on pregnancy	Happy	389	92.4
	Not happy	32	7.6
Substance use history of participants	Yes	22	5.2
	No	399	94.8
Type of substance use	Chat chewing	14	63.6
	Alcohol drinking	8	36.4

Fear of child birth

As shown in figure one above, around a quarter of 102 (24.2%) mothers had fear of child birth

Association between fear of child birth and different independent variables

In the binary logistic regression, ten variables including marital status, history of substance use, history of chronic medical illness, history of previous pregnancy complication, history of previous labor and delivery complication, depression status, participant's monthly income, feeling of husband on the pregnancy, educational status of participant and history of abortion were found to have p-values of all < 0.25. But, in the multivariable logistic regression analysis only four of them i.e. history of previous pregnancy complication, previous history of labor and delivery complications, educational status and depression status had significant association with mother's fear of child birth. The binary and multivariable regression output of different independent variables with mother's fear of pregnancy and child birth is shown in table four below.

Table 4
Regression output of factors associated with fear of child birth at Jinka public health facilities, June 2018, Southern Ethiopia

Variable		Fear of child birth		COR (95% CI)	AOR (95% CI)	p-value
		Yes	No			
Marital status	Married	93	305	1	1	0.708
	Single	9	14	2.12 (0.88–5.03)	0.74 (0.15–3.57)	
History of substance use	No	92	307	1	1	0.168
	Yes	10	12	2.78(1.16–6.64)	3.07.87 (0.62–15.10)	
History of CMI	No	93	308	1	1	0.494
	Yes	9	11	2.71 (1.09–6.74)	1.73 (0.36–8.41)	
Parity of respondent	Primipara	48	86	1	1	0.058
	Multipara	54	233	2.41 (1.52–3.82)	0.44 (0.19–1.03)	
History of abortion	No	36	207	1	1	0.725
	Yes	18	26	3.98 (1.98–7.99)	1.20 (0.43–3.38)	
Monthly income	< 109.4 USD	54	146	1	1	0.756
	>109.4 USD	47	173	0.74 (0.47–1.15)	1.14 (0.49–2.67)	
Complications in previous pregnancy	No	42	228	1	1	0.037*
	Yes	12	7	9.31 (3.46–25.01)	5.60 (1.12–28.29)	
Previous history of labor and delivery complications	No	42	230	1	1	0.039*
	Yes	11	5	12.05 (3.98–36.45)	6.59 (1.09–39.62)	
Husbands feeling	Happy	84	305	1	1	0.068

* Indicates the presence of association ($p < 0.05$) in multivariable logistic regression.

** indicates the presence of strong association ($p < 0.001$) in multivariable logistic regression

	Unhappy	18	14	4.67 (2.23–9.78)	3.35 (0.92–12.28)	
Educational status	No formal education	30	90	1.51 (0.73–3.14)	4.70 (0.71–30.96)	0.108
	Primary (1–8)	46	100	2.09 (1.04–4.18)	10.89 (1.72–69.53)	0.012*
	Secondary (9–12)	13	70	0.84 (0.36–1.96)	1.82 (0.22–14.83)	0.577
	College or university	13	59	1	1	
Depression status	Not depressed	43	276	1	1	0.000**
	Depressed	59	43	8.81 (5.30–14.63)	10.46 (4.32–25.33)	
* Indicates the presence of association ($p < 0.05$) in multivariable logistic regression.						
** indicates the presence of strong association ($p < 0.001$) in multivariable logistic regression						

“1” indicates the category used as a reference in the logistic regression analysis

Discussion

In this study, the prevalence of child birth fear was 24.2%. Almost similar findings were obtained with studies done in Australia (24%) (5) and Iran(25.7%) (18). However the prevalence of this study is lower than study done in Egypt (49.3%) (19), India (45.4%)(20) and United States (39.4%) (21). This difference may be due to difference in socio-demographic characteristics, screening tool used and sample size. On the contrary, lower child birth fear was obtained with studies conducted in Estonia and Sweden(21). This variation might be due to socio-demographic variations, methodological difference and time of study as there could be improvements in health service systems and literacy level of mothers over time.

Moreover, a previous pregnancy complication was significantly associated with fear of childbirth. i.e. pregnant women who had previous pregnancy complication were 5.6 times more likely to have fear of childbirth than those who hadn't previous pregnancy complication (AOR = 5.60, 95% CI (1.12–28.29). This study is supported by study done in Australia(5) and China(22). The possible justification for this might be due to fear of the recurrence of previous pregnancy related complication and posttraumatic feeling of those previous complication.

Previous history of labor and delivery complications was significantly associated with fear of childbirth. Study participants who had previous labor and delivery complications were 6.59 times more likely to have

fear of childbirth than participants who hadn't previous labor and delivery complication(AOR = 6.59, 95% CI (1.09–39.62).. This study is supported by study done in Malawi(12), Australia(5), Sweden(11) and Turkey (23). The possible reason might be due to poor reproductive health counseling, fear of previous labor and delivery complication recurrence, posttraumatic feeling of the previous negative birth experience and poor pregnancy and child birth knowledge.

Educational status was another explanatory variable which had significant association with fear of child birth. Study participants with primary level of educational only were 10.89 times more likely to develop fear of child birth than those whose educational status is college or university(AOR = 10.89, 95% CI (1.72–69.53). Why only primary schooling had association is it is the category with which the highest number of mothers fails. Thus, it considered that educational level in general had association with mother's fear of child birth. This is in line with study done in Malawi(12) and Iran(20). The possible reason may be due to those participants with their educational status fall in primary level may have inadequate knowledge on maternal health service.

In addition, fear of child birth was also significantly affected with depression status of mothers. Study participants who had antenatal depression history were 10.46 times more prone to have fear of child birth than those mothers who hadn't antenatal depression (AOR = 10.46, 95% CI (4.32–25.33). A similar finding was obtained with a study conducted in Australia(5). This could be resulted as depressive symptoms can exacerbate physiological changes which occur during pregnancy, labor and delivery and leads to anxiety and childbirth fear.

Conclusion

In this study, a considerable figure of mothers has fear of child birth. Even though it is physiological to have some fear, the result obtained is relatively higher. Previous pregnancy and child birth complications as well as depression together with educational status of mothers significantly lead mothers to have fear of child birth. Improving literacy, providing adequate health information on different obstetric histories and their real risk to pregnant mothers as well as integrating psychiatric assessments particularly depression assessment with maternal health services is recommended to prevent mother's child birth fear.

Abbreviations

ANC-Ante natal care

AOR-Adjusted Odds Ratio

BDI-Beck's Depression Inventory

BSc-Bachelor Science

CI-Confidence Interval

COR-Crude Odds Ratio

FOC-Fear of child birth

OSSS-Oslo Social Support Scale

SD-Standard Deviation

SPSS-Statistical Packages for Social Sciences

Declarations

Ethics approval and consent to participate

Ethical approval and clearance were obtained from the institutional review board of Arba Minch University, College of Health Sciences. Additional permission was obtained from Jinka public health facilities. Moreover, the purpose of the study was explained to the study participants and verbal informed consent was taken before data collection started. Verbal consent was taken as there is no harm to the study participants as a result of participating in the study and this was approved by the ethical review board of Arba Minch University. To keep the confidentiality of the participants, personal identifiers like name of the participant was not included in the data collection format and ensured throughout the research process. Again the information obtained was utilized only for research purposes. Participation was entirely voluntary.

Consent for publication

Not applicable

Availability of data and materials

The datasets used for this study could be deposited in publicly available repositories where appropriate and upon reasonable request. All relevant raw data supporting the findings and conclusions of this study can also be freely available from the corresponding author through email "enemelkamu@gmail.com" or with other means to any scientist wishing to use them for non-commercial purposes without breaching participant confidentiality upon reasonable request. There will not be any concern on ethical aspect for this as participant data was de-identified

Competing interests

The authors declare that they have no competing interest

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Author's contribution

AY designed and conceptualized the study. AY and EM analyzed and interpreted the data, discuss the findings of the study and draft the manuscript.

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Figures

Figure 1
fear of child birth at Jinka public health facilities, June 2018, Southern Ethiopia