

Fear of vaginal birth and its associated factors among pregnant women attending the antenatal outpatient department at a tertiary-level maternity hospital, Kathmandu

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ABSTRACT

Introduction: Pregnancy and childbirth are natural, but anxiety about motherhood, a condition called “tokophobia”, is common. The rate of cesarean sections is rising, often due to fear of vaginal birth (FOVB), linked to maternal age, occupation, and gestational age. FOVB can lead to adverse outcomes like fetal loss, lower birth weight, and longer or more complicated labor, sometimes requiring epidurals. The study aimed to assess FOVB levels and related factors among pregnant women at the antenatal outpatient department.

Methods: This cross-sectional study, approved by NAMS IRB (Ref. no. 476), used purposive sampling to select 165 pregnant women at a tertiary hospital's antenatal OPD in Kathmandu. Data were gathered through face-to-face interviews with a semi-structured questionnaire. After cleaning and coding, analysis in SPSS v16 involved descriptive (frequencies, percentages, means, SDs) and inferential (Chi-square, Fisher's exact) statistics.

Results: Among 165 pregnant women, 53.9% expressed very positive emotions about the pregnancy, and 99% favored vaginal delivery, 33.3% experienced mild, 36.4% moderate, and 30.3% severe fear of vaginal birth (FOVB). Notably, FOVB showed no statistically significant association with socio-demographic factors, obstetric history, or family support.

Conclusion: The study found two-thirds of respondents had significant fear. Midwives and obstetricians can improve care and counseling to help pregnant women overcome fears of vaginal birth. Focused counseling may boost vaginal birth preferences and lower fear-driven cesarean requests. Future research should include women from all trimesters to compare fear levels and counseling impact throughout pregnancy.

Keywords: Determinants of fear of childbirth, Fear of childbirth, Wijma delivery expectancy/experience questionnaire

INTRODUCTION

Pregnancy and childbirth are the most joyful and important periods for every woman. Although pregnancy is natural and childbirth is a physiological process of the life cycle, a woman experiences anxiety for the physical and mental consequences that motherhood evokes. With regard to childbirth, it is probably “healthy” to experience concern or anxiety to a certain degree, as it can help women to prepare for childbirth. However, if their fear becomes paralyzing and terrifying, it can become physically and emotionally disabling. The fear of childbirth is also called “tokophobia”. Three types of tokophobia, depending on the circumstances that determine its onset, are Primary tokophobia – regarding nulliparous women, Secondary tokophobia, as a consequence of a previous experience of traumatic childbirth, and Tokophobia as a symptom of depression.¹

There is an increasing rate of cesarean section (CS). The main factor of unnecessary (non-medical indication)² CS is the fear of vaginal birth. According to the latest data from 150 countries, currently 18.6% of all

births occur by CS, ranging from 1.4% to 56.4%.³ Low-risk women preferred a cesarean section with 24.5% cesarean rate in Argentina, Thailand, Viet Nam, and Burkina Faso.⁴ The study in Egypt revealed that CS was preferred 47.8% of pregnant women. One of the associated factors was fear of vaginal birth (FOVB).⁵ The study in Iranian women reveals that the prevalence of childbirth fear is 19.6% as moderate and 6.1% as severe fear.⁶

In Pakistan, there is also an increasing rate of CS, i.e., 13.6%.⁷ Likewise, in India, the prevalence of CS is higher in the private sector (49.2%) than in the public sector (31.9%).⁸ Recently, in Nepal, there has been a sharp rise in cesarean section rates. It is from 9 to 81% in different hospitals, particularly in the private setting.⁹ The rate of cesarean section was increased from 6.63% to 36.99% (078/079) to 8.73%-44.53% (080/081) among total expected live births in Nepal.¹⁰

Worldwide, the prevalence of FOVB ranged from 3.7% to 43%. The overall pooled prevalence, using a random-effects model, was 14%. When the Wijma Delivery Expectancy Questionnaire Part A (W-DEQ A) is used in the third trimester with a cut-off point of ≥ 85 , the prevalence of fear in all pregnancies is 7.5% to 12%, whereas in multiparous mothers, it is 15.7%.¹¹ A total of 11.3% of primiparous and 10.9% of multiparous women had severe fear of childbirth (W-DEQ>85). Multiparous women with a fear of childbirth were more likely to have undergone a cesarean in a previous birth. Close to half of them reported a mostly negative experience of the previous childbirth.²

Cesarean section rate has significant ($p<.001$) associations among childbirth fear, anxiety, sleep deprivation, fatigue, state anxiety, daily stressors, and available help.¹² Maternal age, occupation, and gestational age were significantly associated with fear of childbirth (FOC). Other associated factors with fear of childbirth were ANC follow-up in current pregnancy, any medical complication in the current pregnancy, and

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Husband support.¹³

Fear during pregnancy may have adverse effects such as fetal loss, drop in birth weight, poorer obstetric outcomes, a greater chance of requiring a cesarean delivery, longer duration of labor, and use of epidural anesthesia during labor.¹⁴ Fear of childbirth may lead to not wanting to be pregnant or terminate the pregnancy.¹ Recent data from NDHS (2022) shows that C-section rates in private hospitals in Nepal have surged to over 51%. Many of these are elective and driven by fear. Understanding FOVB is the first step in creating counseling programs to prevent unnecessary surgeries that lead to financial hardship and longer physical recovery.¹⁵

The aim of the study is to identify the level of fear of vaginal birth and its associated factors among pregnant women attending the antenatal outpatient department.

METHODS

A descriptive cross-sectional study was done to find out the level of fear of vaginal birth and its associated factors among pregnant women. The study was conducted in the antenatal outpatient department of Paropakar Maternity and Women’s Hospital, Thapathali. It is a governmental tertiary hospital of Nepal. The antenatal outpatient department (OPD) runs six days a week. Pregnant women from different parts of Nepal come for the antenatal visit and delivery due to the availability of tertiary-level hospital services and facilities. The average number of pregnant women visiting per month is 5,970, and among them, around 4,326 are follow-up cases. The average 230 pregnant women visit per day in OPD.

The Study population was all pregnant women of the age group (20 to 45 years) in the third trimester of their pregnancy, having no complications. The Sample size was estimated based on the prevalence of fear of vaginal birth in Iranian women (19.6%)⁶ by Forough Mortazavi and Jila Agah using WEDQ which cut off point was ≥85 of total sum. Using the formula $n = Z^2pq/d^2$, with a 95% confidence level and 6% margin error, the calculated sample size was 165 pregnant women. The purposive sampling technique was used to select the study’s sample units. Pregnant women in the third trimester (32 or above WOG) of pregnancy with no high-risk conditions were included. Whereas women who were in labor pain, pregnant mothers who had participated in pretesting, and those who were unwilling to participate were excluded.

A semi-structured questionnaire was developed based on a literature review, and the short scale WEDQ version A was adopted after obtaining permission by mail and then translated into Nepali. The questionnaire consists of Part A: Questions related to the socio-demographic characteristics of pregnant women, Part B: Questions related to the obstetric characteristics of pregnant women, Part C: Questions related to the perception of family support, and Part D: The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) Version A

The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) has been designed specifically to measure fear of childbirth (FOC), operationalized as the cognitive appraisal of delivery. This 33-item rating scale uses a 6-point Likert scale, ranging from ‘not at all’ (=0) to ‘extremely’ (=5), yielding a score range of 0 to 165, with higher scores indicating greater fear. Internal consistency and split-half reliability of the W-DEQ = 0.87. A W-DEQ score of < 85 was mild, ≥ 85 to 99 was considered to indicate moderate, and ≥ 100 was severe FOC.¹¹ Content validity was established by literature review, consulting with research advisor, statistician, subject matter experts, and valuable suggestions from colleagues. A bilingual expert was consulted during the translation of the tool into Nepali.

The reliability of the research tool was maintained by pretesting of 10% of sample size i.e. 16 pregnant women in Paropakar Maternity and Women’s Hospital.

Approval from the research committee of Bir Hospital Nursing campus and the institutional research board of the National Academy of Medical Science, with ethical approval ref. no 476, as well as from the institutional research committee of Paropakar Maternity and Women’s Hospital, with approval no 2126, was obtained. Face-to-face interviews were conducted for 4 weeks after obtaining written informed consent

from each respondent. The privacy was maintained by using a separate corner of the OPD for the interview. The average time for data collection was 20-25 minutes each. The interview was 6-8 per day. Confidentiality was maintained by coding and not sharing with others, and the information was used only for the study purpose. Microsoft Excel 2010 and SPSS version 16 were used for data entry and analysis. Descriptive statistics were used to analyze and interpret the findings, including frequencies and percentages for the socio-demographic and obstetric characteristics. WEDQ version A was analyzed in terms of mean, standard deviation, and range. Likewise, inferential statistics such as the chi-square test and Fisher’s exact test were used for finding the association between the influencing and study variables.

RESULTS

The study included 165 pregnant women with a mean age i.e. 25.13±4.47 (range 20-45 years). More than half of the pregnant women had secondary education i.e. 86 (52.1%), while 7 (4.2%) of pregnant women were illiterate. Most pregnant women were Janajati, i.e., 99(60%), homemakers, i.e., 124(75.2%), and resided in an urban area during the current pregnancy, 155(93.9%). Around half of women i.e. 78(47.3%) had household income only upto NRs.25000.

More than half of respondents were term pregnancies, i.e., 91(55.2%), and the mean gestational age was 36.82±2.491. The minimum and maximum weeks of gestation were 32-41 weeks. Both primigravida and multigravida were nearly equal. Almost 49(50.3%) of the women had a normal vaginal delivery in their previous birth, followed by abortion in 33(39.3%). Similarly, the previous pregnancy outcome was around 51 (60.7%) live births, but women’s experiences of their previous delivery varied. The majority of pregnancies (147, 89.1%) were planned, and more than half 109(66.1%) visited more than 4 ANC visits. Regarding the present pregnancy, more than half had very positive feelings, i.e., 89(53.9%). Almost all prefer vaginal delivery, except one, who prefers the cesarean section.

More than one third of women 60(36.4%) had moderate fear of vaginal birth, and nearly one third of women 50(30.3%) had severe fear. The mean score of fear of vaginal birth was 90.56 ±15.58. The score range was 48-124 (Table 1).

Table 1: Level of Fear of Vaginal Birth (n=165)

Level of fear	Frequency	Percentage(%)
Mild (<85 score)	55	33.3
Moderate (85-99 score)	60	36.4
Severe (≥100 score)	50	30.3

Mean and SD (90.56±15.58), Range (48-124)

Fear of vaginal birth was high in pregnant women below 30 years old, home maker, low income, living urban area and nuclear family. But there was no statistically significant association between any of the listed socio-demographic variables (age, ethnicity, education, employment, income, residence, or family type) and the fear of vaginal birth, as all p-value exceed the 0.05 threshold (Table 2).

The moderate to severe fear were higher in >37WOG (57.3%), Multigravida (52.7%), Normal vaginal delivery (60.3%), live birth (62.1%), negative previous experience (55.2%), planned pregnancy (90.0%) and more than 4 ANC visits (66.4%) in current pregnancy. None of the obstetric variables listed (Gestational age, Gravida, Previous mode of delivery, Outcome of previous pregnancy, Experience of previous delivery, Planning status, or ANC visits) showed statistically significant association with the level of fear of vaginal birth, as all p-values are greater than 0.05 (Table 3).

Women who had prepared for emergencies (mother supplies, vehicles, money, and support) still experienced high levels of fear. Those pregnant women who had birth preparation for emergencies such as mother supplies, vehicles, money and supportive person, had high level of fear i.e. 69.1%, 65.5%, 89.1% and 91.8% respectively. Likewise greater fear was observed among them who had not prepared like

supplies for baby and blood donor. Having or not having specific birth preparedness components did not statistically impact whether the participant experienced mild or moderate fear of vaginal birth (Table 4).

Table 2: Association of Socio-demographic and Level of Fear of Vaginal Birth (n=165)

Category	Mild fear no. (%)	Moderate to severe fear no. (%)	Chi-square	p-value
Age (years)				
20-30	42 (76.4)	94 (85.5)	2.092	0.148
>30	13 (23.6)	16 (14.5)		
Ethnicity/surname				
Janajati	27 (49.1)	72 (65.5)	4.832	0.089
Brahmin/Chhetri	18 (32.7)	28 (25.5)		
Other	10 (18.2)	10 (9.1)		
Educational level				
Upto Primary	23 (41.8)	37 (33.6)	1.061	0.303
Secondary	23 (41.8)	63 (57.3)		
Bachelor or more	9 (16.4)	10 (9.1)		
Employment status				
Working women	14 (25.5)	27 (24.5)	0.016	0.899
Home-maker	41 (74.5)	83 (75.5)		
Income				
<=25000	25 (45.5)	53 (48.2)	0.129	0.937
26000-50000	22 (40.0)	41 (37.3)		
>50000	8 (14.5)	16 (14.5)		
Resident				
Rural	3 (5.5)	7 (6.4)	-	1.00*
Urban	52 (94.5)	103 (93.6)		
Type of family				
Nuclear	29 (52.7)	66 (60.0)	0.794	0.373
Joint	26 (47.3)	44 (40.0)		

*Fisher exact test

DISCUSSION

This cross-sectional study assessed level of fear of vaginal birth and its associated factors among pregnant women attending an antenatal OPD at tertiary level maternity hospital, Kathmandu. Over two-thirds of the participants (66.7%) reported moderate-to-severe fear, suggesting that Fear of vaginal birth (FOVB) is a significant public health concern within this population rather than just an individual psychological issue. The two studies conducted in Nepal reveal a significant psychological burden of childbirth fear among expectant mothers, though they differ in their specific classifications and obstetric scope. In the first study, which focused exclusively on primiparous women, a majority (64.7%) exhibited a moderate level of fear with WDEQ tool.¹⁶ In contrast, research involving women across all trimesters in Kathmandu reported a higher intensity of concern, with 56.7% of respondents experiencing high fear.¹⁴ These discrepancies in prevalence are likely attributed to differences in gestational age at the time of assessment and the specific psychometric tools employed. The current study showed multiparous women had moderate to severe fear of vaginal birth i.e. 58(52.7%). Similarly, the study of European revealed, the prevalence of fear in all pregnancy is 7.5% to 12% where as in multiparous mother is 15.7%.¹¹ In contrast, a total of 11.3% of primiparous and 10.9% of multiparous women had severe fear of childbirth (W-DEQ>85). Multiparous women with fear of childbirth were more likely to have undergone a cesarean in previous birth. Close to half of them reported a mostly negative experience of the previous childbirth.² These variation in fear of vaginal birth in gravida

might be different in study setting.

Table 3: Associations between Obstetric Variables and Level of Fear of Vaginal Birth

Variable	Mild fear no. (%)	Moderate to severe fear no. (%)	Chi-square	P-value
Live birth	14 (53.8)	36 (62.1)	0.504	0.478
Other	12 (46.2)	22 (37.9)		
Experience of previous delivery (n=84)				
Positive	9 (34.6)	26 (44.8)	0.770	0.380
Negative	17 (65.4)	32 (55.2)		
Planning status of present pregnancy				
Planned	48 (87.3)	99 (90.0)	0.281	0.596
Unplanned	7 (12.7)	11 (10.0)		
ANC visit				
<4 visit	9 (16.4)	13 (11.8)	0.808	0.668
4 visit	10 (18.1)	24 (21.8)		
>4 visit	36 (65.5)	73 (66.4)		
Gestational age				
32-36 WOG	22 (40.0)	47 (42.7)	0.112	0.738
>37 WOG	33 (60.0)	63 (57.3)		
Gravida				
Primigravida	29 (52.7)	52 (47.3)	0.437	0.509
Multigravida	26 (47.3)	58 (52.7)		
Previous mode of delivery (n=84)				
Normal vaginal delivery	14 (53.8)	35 (60.3)	0.312	0.576
Other	12 (46.2)	23 (39.7)		

4: Associations of Component of Birth Preparedness and Level of Fear of Vaginal Birth (n=165)

Birth preparedness	Mild fear no. (%)	Moderate fear no. (%)	Chi-square	P-value
Necessary supplies for mother				
Yes	31 (56.4)	76 (69.1)	2.606	0.106
No	24 (43.6)	34 (30.9)		
Necessary supplies for baby				
Yes	21 (38.2)	38 (34.5)	0.21	0.646
No	34 (61.8)	72 (65.5)		
Blood donor				
Yes	5 (9.1)	14 (12.7)	0.609	0.341
No	50 (90.9)	96 (87.3)		
Vehicle for emergency				
Yes	36 (65.5)	72 (65.5)	0.000	1.000
No	19 (34.5)	38 (34.5)		
Money				
Yes	45 (81.8)	98 (89.1)	1.678	0.195
No	10 (18.2)	12 (10.9)		
Supportive person				
Yes	49 (89.1)	101 (91.8)	0.330	0.566
No	6 (10.9)	9 (8.2)		

Systematic reviews and meta-analyses indicate that the global prevalence of FOC ranges from 3.7% to 43%.^{11,17} Research in Australian involving second-trimester women (<=26 weeks) reported low fear in

31%, moderate fear in 43%, high fear in 18.8%, and severe fear in 4.8% of participants.¹⁸ Similarly, in Thailand 18.4%, 64.9%, 16.1% and 0.7% in low, moderate, high and severe fear respectively.¹⁹ Another study in Thailand among singleton nulliparous women (32–37 weeks gestation), the prevalence of high-to-severe FOC was 19.5%. Using the WDEQ-A tool (with cut-offs of <38 for low, 38–65 for moderate, 66–84 for high, and ≥85 for severe). The prevalence of high-to-severe FOC was 19.5%.²⁰ Using a cut-off of ≥66 for high fear, researchers found 39% low, 41% moderate, and 20% high fear levels in Malawi.²¹ Studies reported a general FOC prevalence of 29.2%,²² with specific findings of 20% moderate and 6% severe fear in Iran.⁶

The severe FOC in the six European countries varied from 4.5% to 15.6% average of 11% fear of childbirth.²³ The study in Ethiopia showed one-fourth (25.5%) had a severe level of childbirth fear. In addition, 23.8%, 12%, and 38.8% of pregnant women had low, moderate and high levels of childbirth fear respectively.¹³ Most of the study showed the moderate fear of childbirth however the level of fear and week of gestation of pregnant women were different. Likewise, the other study which used other instrument for evaluate fear of childbirth, the prevalence of childbirth was 42%.²⁴ Ethiopia study, severe level of fear of childbirth among pregnant women was 1.9 times higher than those in the first trimester (AOR = 1.9, 95%CI (1.1, 3.4)).¹³

In the present study, Pearson's chi-square and Fisher's exact tests revealed no statistically significant associations between the level of fear regarding vaginal birth and socio-demographic factors, obstetric characteristics, or the presence of a support person. This lack of significance persisted despite a study population ranging from 20 to 45 years of age and a gestational age of ≥32 weeks. Similarly, the study of Iran, perceived social support from the spouse, education, husband's education, and sufficient income for living expenses, job²⁵ had no significant association with fear of childbirth however other study of Iran reported education, occupation, history of infertility and history of psychiatric disorder were significantly associated with fear of childbirth.²² The study in European, no statistical significant between age, education, gestational age and parity with fear of childbirth.²³ In contrast, research conducted in Australia among a younger cohort (≥16 years) at an earlier gestational stage (≤24 weeks) found that factors such as employment status and parity were influential; specifically, primigravida and women in paid employment reported higher levels of fear.¹⁸ The study in European, negative experience of the previous childbirth² and maternal age, occupation, gestational age, ANC follow-up in current pregnancy, any medical complication in the current pregnancy, and Husband support in Ethiopia¹³ were significantly associated with fear of childbirth. The study conducted in Thailand, family support²⁰ and planned pregnancy¹⁹ also significant associated with fear of childbirth.

The limitations of this study include the use of association-based analysis only. It would be more effective to employ regression analysis to identify specific determinants across different age groups and gestational ages.

CONCLUSION

The current study shows two-thirds of respondents (66.7%) had clinically significant fear however almost all preferred vaginal birth. Midwives and obstetricians can enhance the care plan and counseling to empower pregnant women to overcome fears regarding vaginal birth. Targeted counseling that addresses these fears can increase the preference for vaginal birth and reduce unnecessary, fear-driven cesarean section requests. Future studies should include women from all trimesters to allow for a comparative analysis of fear levels and counseling effectiveness across the entire pregnancy.

DECLARATIONS

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Author Contributions:

AM reviews the literature and designed the research. AM and BT made conceptualization of research. AM did data collection, data analysis and

prepares result. AM and BT prepared result manuscript. AM and SM drafted the manuscript and final approved of the version ready for submission. AM agreed to accountable for the aspects of the research work.

Ethical approval

Approval from the research committee of Bir Hospital Nursing campus and institutional research board of National Academy of Medical Science as well as from institutional research committee of Paropakar Maternity and Women's Hospital was obtained.

Consent

Informed written consent was obtained from the all the participants before data collection.

Conflicts of Interest

Author(s) declare no conflict of interest.

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