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Fear of childbirth and its associated factors among pregnant women in Bangladesh: A Cross-Sectional Study

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Abstract

Background: Fear of childbirth (FOC) is a widespread maternal health concern associated with heightened anxiety, increased medical interventions, and negative birth experiences. While prevalent globally, FOC remains underexamined in low-resource settings such as Bangladesh. This study aimed to determine the level of FOC and identify associated factors among pregnant women in Bangladesh.

Methods: A cross-sectional study was conducted among 262 pregnant women attending antenatal care at Shariatpur Government Upazila Health Complex (December 2023-May 2024). Data were collected using a structured questionnaire and the Melender FOC Scale. Participants were selected using a convenience sampling technique. Fear was categorized as low, moderate, or high. Descriptive analysis, Chi-square tests, ordinal logistic regression, and multivariate logistic regression were performed to identify predictors of FOC using SPSS version 25.

Results: A survey of 262 pregnant women revealed a moderate mean level of fear of childbirth (FOC) (47.45 ± 6.9). Regression analysis identified several significant predictors of higher FOC. The strongest associations were with limited spousal support (AOR = 2.64; 95% CI: 1.38–5.06; p = 0.003) and not attending childbirth classes (AOR = 2.33; 95% CI: 1.21–4.49; p = 0.011). Other significant factors included younger maternal age, lower education (in both the woman and her husband), rural residence, and lower socioeconomic status. These findings underscore the multifactorial nature of FOC, highlighting the need for interventions that address its key social and educational determinants.

Conclusion: FOC is highly prevalent among pregnant women in Bangladesh and is influenced by sociodemographic, obstetric, and psychosocial factors. Routine screening, culturally sensitive prenatal education, improved communication, and partner-inclusive support are recommended to reduce FOC and improve maternal outcomes.

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Highlights

What is current knowledge?

Fear of childbirth (FOC) is a prevalent issue faced by pregnant women globally, linked to anxiety, depression, and adverse maternal and neonatal outcomes. Research indicates that elements such as younger maternal age, lower educational attainment, insufficient social support, and past negative birth experiences lead to increased levels of FOC. However, there is a lack of data from Bangladesh, underscoring the necessity to study culturally specific factors and aspects of fear related to childbirth.

What is new here?

This research determines the primary predictors of FOC among pregnant women in Bangladesh, emphasizing significant fear domains such as the physical aspects of childbirth, maternal and neonatal health, interactions with healthcare personnel, family dynamics, and cesarean delivery. The results offer context-specific insights that can inform targeted interventions, support initiatives, and educational approaches aimed at alleviating childbirth-related fear within this demographic.

Introduction

Fear of childbirth (FOC), a prevalent obstetric issue, negatively impacts women's health and is associated with factors such as higher socioeconomic status, depression, advanced maternal age, and prior operative births (1). Fear of childbirth (FOC) is a significant psychological concern that can profoundly affect the well-being of pregnant women and influence maternal and neonatal outcomes. Globally, FOC is recognized as a common experience, with a systematic review and meta-analysis (2) estimating the prevalence of tocophobia at approximately 14%, although rates vary widely across different populations and cultural contexts. Studies from Sweden and Iran, for example, have reported prevalence rates ranging from 19% to over 80%, depending on the population studied and the measurement tools used (3-5). The study by Hildingsson et al. (2017) showed that the prevalence of fear of birth was 22% in mid-pregnancy and 19% in late pregnancy (3). Another study by Mortazavi et al. (2018) revealed that 19.6% and 6.1% experienced moderate (Mean W-DEQ score ≥ 85) and severe (Mean W-DEQ score ≥ 100) fear of childbirth, respectively (4).

FOC is a multifaceted phenomenon influenced by a range of demographic, psychosocial, and cultural factors. Research has consistently shown that younger maternal age, lower educational attainment, limited social and spousal support, low socioeconomic status, and negative beliefs about childbirth are significant predictors of heightened FOC (6-9). Additionally, previous negative birth experiences, lack of childbirth preparation, and insufficient information about the birth process further contribute to increased fear (10-12).

In Bangladesh, maternal health remains a public health priority, with ongoing efforts to reduce maternal morbidity and mortality. However, the psychological aspects of pregnancy, including FOC, have received comparatively less attention. Existing studies in Bangladesh have highlighted the prevalence of antenatal depression and anxiety, often linked to social determinants such as poverty, limited education, and lack of support (13,14). Furthermore, FOC has been associated with a preference for elective cesarean section, which is a growing trend in Bangladesh and may have implications for maternal and neonatal health outcomes (15).

Despite the global and regional significance of FOC, there is a paucity of research specifically examining its prevalence and associated factors among pregnant women in Bangladesh. Understanding the level of FOC and its determinants in this context is essential for developing targeted interventions to support maternal mental health and promote positive birth experiences. Therefore, this study determined the FOC level and its associated factors among pregnant women in Bangladesh, which informs policymakers to take interventions to improve maternal confidence and reduce fear during childbirth.

Methods

Study design and setting

A descriptive cross-sectional study was conducted between December 2023 and May 2024 at the Shariatpur Government Upazila Health Complex, Bangladesh, which provides antenatal, emergency, and specialist maternal care services.

Study participants and eligibility criteria

The study population consisted of pregnant women attending routine antenatal care at the facility during the study period. Both primiparous and multiparous women were eligible.

Inclusion criteria

In this study, a wide gestational range (18 - 37 weeks and above) with singleton pregnancies was included to capture a representative sample of women at different pregnancy stages. Participants who provided written informed consent were enrolled.

Exclusion criteria

Women with multiple pregnancies (e.g., twins), non-cephalic presentations, severe obstetric complications, or a documented history of physical or psychiatric illness (e.g., epilepsy, schizophrenia, severe depression) that might impair their ability to participate were excluded.

Sample size and sampling

The sample size was determined using the G*Power 3.1.9.7 program based on a multiple logistic regression model, as the study aimed to identify factors associated with different levels of FOC. Following Cohen's (1988) recommendations for behavioral and health research, a medium effect size (Odds ratio ≈ 1.5; $f^2 = 0.15$), a significance level (α) of 0.05, and a statistical power ($1–\beta$) of 0.80 were applied. Considering up to 9 predictor variables (Socio-demographic) in the final model, the required minimum sample size was calculated as 238 participants.

This estimate is also consistent with the prevalence of FOC (80.8%) reported in Beiranvand et al. (2017) among Iranian primigravid women, ensuring comparability with prior studies in similar contexts (5). To account for a potential 10% non-response rate, the final target sample size was increased to 262 participants.

A convenience sampling technique was adopted, as the Shariatpur Government Upazila Health Complex functions as the main antenatal care center for the district, providing access to a broad cross-section of pregnant women. Probability-based approaches, such as multistage cluster sampling, were considered but were not feasible due to time and resource constraints (5).

Data collection instruments

Data were collected through structured face-to-face interviews using two validated tools: a Structured Interview Questionnaire adapted from (16) and the Melender (2002) Questionnaire.

1. Part I: Socio-demographic characteristics (9 items: age, education, religion, occupation, husband's education, husband's occupation, residence, income, etc.).

2. Part II: Obstetric history (8 items: parity, miscarriage history, gestational age, etc.) and birth mode preference with reasons.

3. Part III: Melender (2002) Questionnaire for assessing factors associated with FOC, consisting of five domains of fear: (A) childbirth process, (B) maternal and child well-being, (C) healthcare staff, (D) family life, and (E) cesarean section.

Items were rated on a 4-point Likert scale (1 = agree, 2 = agree to some extent, 3 = disagree to some extent, 4 = do not agree) (17). Total scores ranged from 21 - 84, with higher scores indicating lower levels of fear. Fear levels were categorized into four ranges based on total scores: high (21 - 42), moderate (43 - 56), low (57 - 70), and no/minimal fear (71 - 84). Higher scores reflect reduced fear.

Validity and reliability of the instrument

The Melender questionnaire has demonstrated strong content and construct validity in multiple populations (16,17). Content validity was established through expert evaluation of items covering psychological, physical, and social dimensions of childbirth fear. Construct validity was confirmed through factor analysis in the original Finnish and subsequent cross-cultural adaptations, supporting the five-domain structure.

For internal consistency, the original study by Melender (2002) reported a Cronbach's alpha of 0.87, indicating high reliability (17). Similarly, Abd El-Aziz et al. (2017) found a Cronbach's alpha of 0.89 among Egyptian women, confirming cross-cultural reliability (16). In the present study, the adapted Bangla version of the tool showed satisfactory internal consistency with a Cronbach's alpha of 0.85, indicating acceptable reliability for use in the Bangladeshi context.

External validity was enhanced by adapting the questionnaire into both English and Bangla, ensuring linguistic and cultural appropriateness through back-translation and expert review by three maternal health specialists. A pretest with 20 pregnant women was conducted to assess clarity, comprehension, and cultural relevance; minor linguistic adjustments were made accordingly. Thus, the Melender (2002) Questionnaire demonstrated good psychometric robustness and suitability for assessing the multidimensional aspects of FOC in the current population (17).

Data collection procedure

Eligible participants were approached during antenatal visits. After the study objectives were explained, written informed consent was obtained. Data were collected through structured face-to-face interviews using a standardized questionnaire in Bangla, conducted by trained female interviewers to ensure clarity and comfort.

Data analysis

Data were entered and analyzed using SPSS version 25. Descriptive statistics (Means, standard deviations, frequencies, and percentages) were used to summarize socio-demographic and obstetric characteristics. The normality of continuous variables was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Bivariate associations between socio-demographic factors and levels of FOC were examined using the chi-square test, and non-parametric analyses were applied where appropriate.

Ordinal and multivariate logistic regression analyses were then performed to identify predictors of higher FOC and high versus low/moderate FOC, respectively. Variables entered into the models included maternal age, maternal education, husband's education, occupation, place of residence, monthly family income, spousal support, and attendance in childbirth preparation classes. Adjusted odds ratios (AORs) with 95% confidence intervals (CIs) were calculated to estimate the strength of associations.

Model fit was assessed using the chi-square goodness-of-fit test and Nagelkerke R^2 values. The ordinal regression model demonstrated good fit (χ^2 (8) = 76.21, $p < 0.001$; Nagelkerke $R^2 = 0.38$), while the multivariate logistic regression model also showed satisfactory fit (χ^2 (8) = 89.64, $p < 0.001$; Hosmer-Lemeshow $p = 0.47$; Nagelkerke $R^2 = 0.47$). Statistical significance was set at $p < 0.05$.

Results

A total of 262 pregnant women participated in the study, yielding a 100% response rate, as all eligible women who were approached during the study period consented and completed the interviews.

Socio-demographic characteristics

Most participants were aged 24 - 29 years (43.5%), had secondary education (41.2%), and were housewives (45.4%). About 62.2% lived in urban areas. Husbands predominantly worked in the private sector (43.9%), and 40.1% had secondary education. Most households reported monthly incomes of ≤ 25,000 BDT (Table 1).

Table 1. Distribution of socio-demographic characteristics of the pregnant women (N = 262)

Variables	Categories	n (%)
	Mean ± SD	**27.23 ± 5.43**
Age of respondents (Years)	18-23 years	65 (24.8)
	24-29 years	114 (43.5)
	30-35 years	57 (21.8)
	Above 35 years	26 (9.9)
Mothers' education	Basic and less	45 (17.2)
	Secondary	108 (41.2)
	Undergraduate	82 (31.3)
	Post graduate	27 (10.3)
Religion status	Muslim	152 (58.0)
	Hindu	78 (29.8)
	Others	32 (12.2)
Respondent's occupation	Housewife	119 (45.4)
	Government employee	65 (24.8)
	Private employee	78 (29.8)
Respondents husband education level	Basic and less	22 (8.4)
	Secondary	105 (40.1)
	Undergraduate	87 (33.2)
	Post graduate	48 (18.3)
Respondent's husband occupation	Government employee	74 (28.2)
	Private employee	115 (43.9)
	Business	73 (27.9)
Respondent's residence area	Rural	99 (37.8)
	Urban	163 (62.2)
Respondents about first source of support for childbirth	Parents	48 (18.3)
	Spouse	166 (63.4)
	Others	48 (18.3)
Monthly family income (Taka)	**Mean ± SD**	3.3 ± 1.2
	≤ 10,000 to 15,000/-	83(31.7)
	16,000/- to 20,000/-	52 (19.8)
	21,000/- to 25,000/-	74 (28.2)
	> 25,000/-	53(20.2)

n= Number of respondents; %= Percentage; M = Mean; SD = Standard Deviation; Others=Christian and Buddhist.

Obstetric characteristics and birth preferences

A total of 65.6% had not attended childbirth preparation classes. Nearly half (48.9%) were in their second pregnancy, and 30.5% reported having had one miscarriage. The majority (55.7%) preferred normal vaginal delivery, while 44.3% preferred cesarean section, mainly due to fear of complications (Table 2).

Factors contributing to fear of childbirth

Assessment of childbirth-related fears identified five domains. In relation to factor 1 (Physical process of childbirth), the highest anxiety was reported regarding pain and complications, including uterine contractions (51.1%), episiotomy (55.0%), ruptures (48.1%), prolonged labor (48.5%), panic (43.9%), and difficulty breathing or pushing (41.6%). For factor 2 (Mother and child well-being), concerns centered on safety outcomes such as stillbirth (52.3%), birth injuries (49.6%), pregnancy complications (46.9%), and other adverse events (48.5%). Factor 3 (Healthcare personnel) captured fears related to communication and vulnerability, including asking "silly" questions (58.0%), exclusion from decision-making (32.8%), unfriendly staff (27.1%), and being left alone (29.0%). Factor 4 (Family life) involved fears of sexual difficulties (44.7%), relationship strain (32.4%), and childcare challenges (32.4%). Factor 5 (Cesarean section) reflected apprehension regarding surgical delivery (41.2%, Tables 3 and 4).

Table 2. Distribution of birth mode preference and obstetrical history among pregnant women (N = 262)

Variables	Categories	n (%)
Participation in childbirth preparation class	Yes	90 (34.4)
	No	172 (65.6)
Number of gravida	1	104 (39.7)
	2	128 (48.9)
	3-5 and above	30 (11.5)
Number of miscarriages	None	154 (58.8)
	1	80 (30.5)
	2-5 and above	28 (10.7)
Gestational age (Weeks)	18- 22/ weeks	71 (27.1)
	23-27/weeks	74 (28.2)
	28-32/ weeks	55 (21.0)
	33-37/ weeks and above	62 (23.7)
Receive prenatal care	Yes	184 (70.2)
	No	78 (29.8)
Getting information about childbearing process	Yes	118 (45.0)
	No	144 (55.0)
Trust in health personnel	Yes	128 (48.9)
	No	134 (51.1)
Preference for mode of delivery	Normal vaginal delivery	146 (55.7)
	Cesarean Section delivery	116 (44.3)
Reason for preferring normal vaginal delivery	Quicker post-delivery recovery	13 (5.0)
	Natural way of delivery	18 (6.9)
	Experience of vaginal delivery for the mother	11 (4.2)
	Less overall pain	14 (5.3)
	Safer for the baby	13 (5.0)
	Safer for the mother	60 (22.9)
	Doctor's advice	100 (38.2)
	Other reasons (Less complications	33 (12.6)
Reason for preferring Caesarean section	Fear of normal vaginal birth	10 (3.8)
	Safer for baby	32 (12.2)
	Less overall pain	17 (6.5)
	No influence on postpartum sexual life	26 (9.9)
	Allows better control of time of birth	18 (6.9)
	Less vaginal trauma	34 (13.0)
	Convenience for sterilization	18 (6.9)
	Doctor's advice	74 (28.2)
	Other reasons (Husband / family member choice)	33 (12.6)

n= Number of respondents; %= Percentage.

Table 3. Distribution of respondents about contributing factors related to fear of childbirth (N = 262)

Factors	Items	Agree (n, %)	Agree to some extent (n, %)	Disagree to some extent (n, %)	Do not agree (n, %)
Factor 1. Childbirth	Pain (Uterine contractions)	134 (51.1%)	57 (21.8%)	21 (8.0%)	50 (19.1%)
	Prolonged childbirth	127 (48.5%)	54 (20.6%)	24 (9.3%)	57 (21.8%)
	Panic during childbirth	115 (43.9%)	49 (18.7%)	29 (11.1%)	69 (26.3%)
	Incompetent parturient	83 (31.7%)	36 (13.7%)	43 (16.0%)	100 (38.2%)
	Ruptures (Lacerations)	126 (48.1%)	54 (20.6%)	25 (9.5%)	57 (21.8%)
	Episiotomy	144 (55.0%)	62 (23.7%)	17 (6.4%)	39 (14.9%)
	Unable to breathe/push correctly	109 (41.6%)	46 (17.6%)	32 (12.2%)	75 (28.6%)
	Not leaving hospital at right time	73 (27.9%)	31 (11.8%)	47 (17.9%)	111 (42.4%)
Factor 2. Child's and mother's well-being	Delivering a dead child	137 (52.3%)	58 (22.1%)	20 (7.6%)	47 (17.9%)
	Child injured during childbirth	130 (49.6%)	56 (21.4%)	23 (8.8%)	53 (20.2%)
	Sick/handicapped child	102 (38.9%)	47 (18.0%)	32 (12.2%)	81 (30.9%)
	Problems during current pregnancy	123 (46.9%)	52 (19.8%)	26 (9.9%)	61 (23.3%)
	Problems during/after childbirth	127 (48.5%)	55 (21.0%)	24 (9.2%)	56 (21.4%)
Factor 3. Health care staff	Unfriendly staff	71 (27.1%)	31 (11.8%)	48 (18.0%)	112 (42.7%)
	Not participating in decision making	86 (32.8%)	40 (15.3%)	38 (14.5%)	98 (37.4%)
	Left alone during childbirth	76 (29.0%)	32 (12.2%)	46 (17.6%)	108 (41.2%)
	Asking silly questions	152 (58.0%)	65 (24.8%)	14 (5.3%)	31 (11.8%)
Factor 4. Family life	Problems in relationship with partner	85 (32.4%)	37 (14.1%)	42 (16.0%)	98 (37.4%)
	Sexual problems	117 (44.7%)	50 (19.1%)	29 (11.1%)	66 (25.2%)
	Problems with child care/rearing	85 (32.4%)	38 (14.5%)	42 (16.0%)	97 (37.0%)
Factor 5. Cesarean section	Having to undergoing cesarean section	108 (41.2%)	46 (17.6%)	32 (12.2%)	76 (29.0%)

n= Number of respondents; %= Percentage.

Table 4. Average score of factors of fear of childbirth among pregnant women

Items	Score		
	Minimum	Maximum	M ± SD
Factor 1. Childbirth	8.00	26.00	17.69 ± 3.52
Factor 2. Child's and mother's well-being	5.00	18.00	10.38 ± 2.78
Factor 3. Health care staff	4.00	16.00	9.75 ± 2.83
Factor 4. Family life	3.00	12.00	7.32 ± 2.34
Factor 5. Cesarean section	1.00	4.00	2.29 ± 1.27
Total score	**21.00**	**84.00**	**36.88 ± 10.11**

M = Mean; SD = Standard Deviation.

Level of fear of childbirth

Mean scores were highest for Factor 1 (17.69 ± 3.52), followed by Factor 2 (10.38 ± 2.78) and Factor 3 (9.75 ± 2.83). Lower scores were observed for Factor 4 (7.32 ± 2.34) and Factor 5 (2.29 ± 1.27), with an overall total score of 36.88 ± 10.11, indicating moderate fear (Table 5). Overall FOC scores averaged 47.45 ± 6.9 (Range: 26 - 67), with 68.3% reporting moderate fear, 21.0% high fear, and 10.7% low fear. The results also showed that FOC scores did not follow a normal distribution (K - S p = 0.011; Shapiro-Wilk p = 0.005; Table 5).

Table 5. Distribution of respondents by level of fear of childbirth (N = 262)

Variable	Fear categories	Level of FOC respondent
Level/Measurement score	Low (57-70)	28 (10.7)
	Moderate (43-56)	179 (68.3)
	High (21-42)	55 (21.0)
	Mean ± SD	47.45 ± 6.9

n= Number of respondents; %= Percentage; M = Mean; SD = Standard Deviation.

Bivariate analysis

Higher FOC was significantly associated with younger maternal age (18-23 years; 30.8%) (p < 0.001), early marriage (28.6%) (p < 0.001), lower maternal education (40.0%) (p < 0.001), housewife status (29.4%) (p < 0.001), and husbands' lower education (90.9%) or government employment (32.4%) (p < 0.001) (Supplementary Table 1). Rural residence (4.0%) (p < 0.001), primary support from spouse (18.1%) (p < 0.001), and lower family income were also linked to higher FOC (p < 0.001). These findings indicate that younger age, lower education, limited spousal support, and lower socioeconomic status are key predictors of heightened fear of childbirth.

Ordinal regression and multivariate logistic regression

Ordinal regression showed that younger maternal age (< 25 years) (AOR = 1.86; 95% CI: 1.14 - 3.03; p = 0.014), lower maternal education (AOR = 1.59; 95% CI: 1.02 - 2.49; p = 0.041), husbands' lower education (AOR = 1.71; 95% CI: 1.02 - 2.87; p = 0.043), lack of spousal support (AOR = 1.97; 95% CI: 1.19 - 3.26; p = 0.008), and non-attendance in childbirth preparation classes (AOR = 1.75; 95% CI: 1.08 - 2.84; p = 0.023) were significant predictors of higher FOC (Table 6).

In the multivariate logistic regression model, younger age (<25 years) (AOR = 2.47; 95% CI: 1.34 - 4.56; p = 0.004), lower maternal education (AOR = 2.05; 95% CI: 1.12 - 3.77; p = 0.021), husbands' lower education (AOR = 2.28; 95% CI: 1.19 - 4.39; p = 0.012), housewife status (AOR = 1.91; 95% CI: 1.03 - 3.53; p = 0.038), rural residence (AOR = 2.04; 95% CI: 1.14 - 3.66; p = 0.017), limited spousal support (AOR = 2.64; 95% CI: 1.38 - 5.06; p = 0.003), low income (≤25,000 BDT/month) (AOR = 1.95; 95% CI: 1.08 - 3.51; p = 0.026), and non-attendance in childbirth classes (AOR = 2.33; 95% CI: 1.21 - 4.49; p = 0.011) remained significant (Table 6).

Overall, younger age, low education, limited partner support, low income, and lack of prenatal class attendance were the strongest predictors of high FOC. The models demonstrated good fit (Ordinal regression: Nagelkerke $R^2 = 0.38$, χ^2 (8) = 76.21, p < 0.001; Logistic regression: Nagelkerke $R^2 = 0.47$, χ^2 (8) = 89.64, p < 0.001).

Table 6. Predictors of higher FOC among pregnant women (Ordinal regression an multivariate logistic regression)

Predictor variable	Ordinal regression		Multivariate logistic regression	
	AOR	95% CI (P-value)	AOR	95% CI (P-value)
Age < 25 years	1.86	1.14 - 3.03 (0.014)	2.47	1.34 - 4.56 (0.004)
Secondary education or less	1.59	1.02 - 2.49 (0.041)	2.05	1.12 - 3.77 (0.021)
Housewife vs. employed	1.42	0.97 - 2.16 (0.067)	1.91	1.03 - 3.53 (0.038)
Husband education ≤ secondary	1.71	1.02 - 2.87 (0.043)	2.28	1.19 - 4.39 (0.012)
Rural residence	1.53	0.97 - 2.41 (0.066)	2.04	1.14 - 3.66 (0.017)
Limited spousal support	1.97	1.19 - 3.26 (0.008)	2.64	1.38 - 5.06 (0.003)
Income ≤ 25,000 BDT	1.62	1.02 - 2.57 (0.041)	1.95	1.08 - 3.51 (0.026)
Not attended childbirth classes	1.75	1.08 - 2.84 (0.023)	2.33	1.21 - 4.49 (0.011)

Adjusted Odds Ratios (AOR); FOC (Fear of childbirth); CI = Confidence Interval; p-value < 0.05 considered statistically significant; The reference categories are: age ≥25 years, higher than secondary education, employed, urban residence, adequate spousal support, family income above median, and attended childbirth classes.

Discussion

The aim of this study was to identify the main domains of fear of childbirth (FOC) among pregnant women and to examine the socio-demographic and obstetric factors associated with heightened fear. Our findings revealed that FOC is multifaceted, with the highest fear related to the physical process of childbirth, followed by concerns for maternal and neonatal well-being, healthcare personnel, family life, and cesarean section. Higher FOC was associated with younger age, lower education, limited spousal support, and lower socioeconomic status.

These results are consistent with a growing body of international research. In this study (6), which was a scoping review of Asian women, it was found that FOC is strongly influenced by cultural beliefs, lack of childbirth knowledge, and insufficient support, with younger and less educated women being particularly vulnerable. Their review included diverse Asian populations, highlighting the importance of context-specific interventions. Similarly, study (18) emphasized that FOC is shaped by personal beliefs, previous experiences, and perceived support, and can negatively impact maternal mental health and birth outcomes.

The relationship between childbirth beliefs and FOC was further explored by (8) in a Turkish sample, who found that negative beliefs about childbirth significantly increased fear, especially among women with limited education and support. The study (19) also reported that Turkish pregnant women with lower socioeconomic status and less access to healthcare resources experienced higher FOC, reinforcing the importance of addressing social determinants.

The prevalence and predictors of FOC have also been studied in China. The study (12) validated the Chinese version of the Wijma Delivery Expectancy/Experience Questionnaire and found that FOC was higher among women with less education and support. Similar study (20) used hierarchical regression analysis and identified similar predictors, including lower education, lack of information, and limited support.

Our results are further supported by systematic reviews and meta-analyses. This study (21) found that Turkish women with lower socioeconomic status and less access to healthcare resources had higher FOC. The similar study (9) reported similar findings in East African women, with younger age, lower education, and limited support being significant predictors. The study (22) studied Chinese women in late pregnancy and found that FOC was associated with lower education, lack of childbirth knowledge, and insufficient support.

Our findings regarding the protective effect of childbirth education are supported by (10), who studied Iranian primiparous women and found that regular attendance at childbirth preparation classes reduced FOC, anxiety, and depression. Their participants were grouped by class attendance, and those regularly attending reported the lowest fear and anxiety. The similar study (3) conducted a longitudinal cohort study in Sweden and found that FOC fluctuates during pregnancy and is influenced by perceived support from healthcare providers, with women reporting higher support experiencing less fear.

The study (5) examined Iranian primigravid women and found that lower education, lower income, and lack of support were associated with higher FOC, which aligns with our findings. The similar study (11) conducted qualitative research among urban Indian women and highlighted the role of social and familial expectations, as well as the impact of negative birth stories, in shaping FOC. The study (23) found that both pregnant women and their partners in Turkey experienced FOC, with communication and support from healthcare staff being key factors.

The impact of FOC on delivery preferences is also well documented. The study (16) found that higher FOC was associated with a preference for elective cesarean section among Egyptian women. This study (15) analyzed Bangladeshi data and reported that FOC and related factors contributed to higher rates of cesarean delivery. Our study similarly found that women with higher FOC were more likely to prefer cesarean section, often due to concerns about pain and complications.

A key limitation of our study is the reliance on self-reported measures, which may introduce response bias and affect the accuracy of the findings. This limitation is common in FOC research, as noted by (18) and others. Another limitation of this study is the use of convenience sampling, which may limit the generalizability of the findings to the broader population of pregnant women in Bangladesh. Future studies should consider simple random sampling. Despite this, a major strength of our study is the diverse sample and systematic identification of FOC domains, which provides a nuanced understanding of the issue and supports the development of targeted, culturally appropriate interventions.

In summary, our study confirms that FOC is a complex phenomenon influenced by demographic, educational, psychosocial, and cultural factors. The findings are consistent with recent international research and highlight the need for comprehensive, multi-level strategies-including education, psychological support, and partner involvement-to reduce FOC and improve maternal well-being.

Conclusion

This study identified that fear of childbirth (FOC) among pregnant women is a multifaceted issue, with the greatest concerns centered on the physical process of childbirth, maternal and neonatal well-being, interactions with healthcare personnel, family life, and cesarean section. Our findings highlight that younger age, lower educational attainment, limited spousal support, and lower socioeconomic status are significant predictors of heightened FOC. Importantly, limited participation in childbirth preparation classes was observed among the majority of participants, and this lack of educational engagement may contribute to increased fear and anxiety surrounding childbirth. These results underscore the need for targeted interventions, such as expanding access to childbirth education and strengthening support systems, particularly for vulnerable groups. Addressing these factors through comprehensive, culturally sensitive strategies can help reduce FOC and promote better maternal mental health and birth outcomes. Future research should further explore effective approaches to increase participation in childbirth preparation and evaluate their impact on reducing FOC.

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Ethical statement

Ethical approval for this study was obtained from the Institutional Ethical Review Board of Enam Medical College, Bangladesh (Memo No. EMC/IERB/2024/01-2). All participants were informed about the purpose and procedures of the study, and written informed consent was obtained prior to their participation. Confidentiality and anonymity were strictly maintained throughout the research process.

Conflicts of interest

The authors declare that there was no competing interest.

Author contributions

The study was conceptualized and designed by HK, SH, ASL, JF, and RI. Data collection was carried out by SS, EAR, JFM, LB, ASL, and AH. Data analysis and interpretation were performed by LB, HK, JFM, ASL, and RI. The manuscript was drafted by HK, CD, JFM, JF, LB, and SA. Critical revision of the manuscript for important intellectual content was undertaken by HK, SH, JFM, JF, ASL, and LB. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work in ensuring the accuracy and integrity of the study.

Data availability statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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