

FACTORS ASSOCIATED WITH FEAR OF CHILDBIRTH AMONG PREGNANT WOMEN

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ABSTRACT

Background: Fear of Childbirth (FoC) is a common psychological concern during pregnancy and may negatively affect maternal health and birth outcomes, including increased blood pressure, prolonged labor, and postpartum depression. FoC is influenced by various demographic, obstetric, and psychosocial factors. **Objective:** This study aimed to identify factors associated with FoC among pregnant women. **Methods:** A quantitative cross-sectional study was conducted involving 113 pregnant women across the first to third trimesters. FoC was assessed using the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ), while perceived social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS). Data were analyzed using Pearson correlation, Spearman correlation, and multiple linear regression analyses. **Results:** Bivariate analysis demonstrated that maternal age, household income, and parity status were significantly associated with FoC ($p < 0.05$). In contrast, education level, occupation, gestational age, and perceived social support showed no significant associations ($p > 0.05$). Multivariate analysis revealed that parity status was the most influential factor affecting FoC among pregnant women. **Conclusion:** Younger women and those with lower parity are more likely to experience FoC, primarily due to limited childbirth experience and uncertainty about labor and infant care. Higher household income was also associated with greater FoC, possibly related to increased exposure to childbirth-related information. Strengthening antenatal education and psychological support is essential to enhance maternal preparedness for childbirth.

Keywords: Fear of Childbirth; pregnancy; parity; maternal anxiety; antenatal education

INTRODUCTION

Childbirth is a multidimensional and unique experience for every woman, it can be positive, negative, or a mixture of both (Aktas *et al*, they give Masses *et al.*, 2021). The process of giving birth is

related to pain and happiness for women and their families (Ariska & Marfuah, 2019). During the period of pregnancy until the end of the labor process, women face various challenges (Marfuah & Ayakannu,

2025). One of the challenges faced by women during pregnancy and can be a source of stress is fear of childbirth (FoC) (Massae *et al.*, 2021). Based on research conducted by Julianti *et al.*, (2023), FoC consists of several aspects, namely the mother's thoughts or feelings about pregnancy, fear of the labor process, fear of possible complications of childbirth in the baby, and fear of complications of childbirth that may occur in pregnant women. The level of FoC varies from individual to individual, ranging from mild to severe (Gelaw *et al.*, 2020).

FoC is a health problem that occurs in pregnant women and is described as a feeling of uncertainty, such as an anxiety disorder or phobic fear (Saisto & Halmesmaki, in Huang *et al.*, 2021). If left untreated, FoC can have long-term impacts on the health of pregnant women. Pregnant women can experience increased blood pressure, longer labor, increased choice of delivery by cesarean section, post-traumatic stress disorder (PTSD), postpartum depression, and negative childbirth experiences that can be repeated in the future (Marcelina *et al.*, 2019). FoC has increased in recent years. Based on previous reports, FoC was found in 20% of pregnant women. Globally, the prevalence of FoC ranges from 5% to more than 40% (Kananikandeh *et al.*, 2022). According to research conducted by O'Connell in Gelaw *et al.*, (2020), it is estimated that around 14% of pregnant women worldwide experience FoC, and

around 10% of pregnant women from high-income countries experience FoC to a severe degree.

In Europe, Australia, and Asia, the prevalence of FoC varies significantly, namely 11%, 4.8%, and 10.6%, respectively (Marcelina *et al.*, 2019). In Indonesia, specific data on FoC is still limited (Julianti *et al.*, 2023b). However, Trisanti & Nurwati, (2022), stated that around 80% of pregnant women feel mild fear, 20% feel moderate fear, and 6-10% feel severe fear in facing childbirth.

There are several factors that can influence the fear of labor or FoC, such as age, education level, income level, occupation, gestational age, parity status and social support, such as the results of a study conducted by Huang *et al.*, (2021), namely age, gestational age, parity, and partner support have a significant effect on FoC with $p < 0.05$. In a study conducted by Serçekuş *et al.*, (2020) it was also found that economic status and parity were factors influencing FoC with $p = 0.000$.

Education level was also found to be a factor influencing FoC, as in the studies of Onchonga, (2021) and Dal Moro *et al.*, (2023), with $p = 0.022$ and $p = 0.003$ respectively. Another factor that influences FoC is work, in the study of Albalawi *et al.*, (2023) said that women who work have a low level of FoC, while in the study of Badaoui *et al.*, (2019) said that women who work have a high level of FoC.

Labor complications can also be a factor that influences the level of FoC in pregnant women and as a major factor influencing fear of labor, as shown in the results of studies conducted by Andersson et al., (2024), Julianti., (2023), Vaajala., (2023) and Slade., (2019). Therefore, the factor of labor complications was not examined in this study because previous studies have shown a significant impact on FoC.

Research on factors such as age, education level, occupation, gestational age, income, parity status and social support has indeed been widely studied in several international studies and has been proven to significantly influence FoC, but in these studies tend to show varying results between studies, and in Indonesia itself research on this topic is still rare. Therefore, researchers are interested in conducting research on 'Factors that Influence FoC on Pregnant Women' and see the results that will be obtained on pregnant women in Indonesia, especially the city of Bandung.

METHOD

Study Design

This study employed a quantitative cross-sectional design to examine factors associated with FoC among pregnant women. A cross-sectional approach was chosen to identify relationships between demographic, obstetric, and psychosocial variables and FoC at a single point in time.

Study Setting and Sample

The study involved 113 pregnant women in their first, second, and third trimesters of pregnancy. Participants were recruited from antenatal care services using a convenience sampling technique.

Inclusion criteria were pregnant women aged 18 years and above, able to read and understand Indonesian, and willing to participate in the study. Pregnant women with diagnosed psychiatric disorders or pregnancy complications requiring intensive medical care were excluded.

Research Instruments

FoC was measured using the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ). The questionnaire consists of 33 items, divided into favorable and unfavorable statements, rated on a six-point Likert scale ranging from 0 (not at all) to 5 (extremely). Total scores are obtained by summing item scores, with higher scores indicating greater FoC. The Indonesian version of the W-DEQ has demonstrated excellent internal consistency, with a Cronbach's alpha coefficient of 0.938.

Perceived social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS), which evaluates support from family, friends, and significant others.

Data Collection Procedure

Data collection was conducted after obtaining ethical approval. Eligible

participants were informed about the study objectives and procedures, and written informed consent was obtained. Respondents completed the questionnaires independently, with assistance provided when clarification was required.

Data Analysis

Data were analyzed using statistical software. Univariate analysis was performed using frequency distributions and descriptive statistics. Bivariate analysis employed the Pearson correlation test for normally distributed variables and the Spearman rank correlation test for non-parametric data. Multivariate analysis was

conducted using multiple linear regression to identify dominant factors associated with FoC.

Ethical Considerations

This study was conducted after receiving ethical clearance from the Health Research Ethics Committee of STIKep PPNI West Java (No. III/067/KEPK-SLE/STIKep/PPNI/JABAR/VI/2024). Participation was voluntary, confidentiality was assured, and respondents had the right to withdraw at any time without consequences.

RESULTS

Univariate Analysis

a. Respondent Characteristics Overview

Table 1 Description of characteristics of age, education level, occupation, gestational age, monthly household income, parity status and social support in pregnant women (n=113)

Variables	Mean $\pm$ SD	Min	Max
Age (Years)	27.39 $\pm$ 5.457	19	41
Gestational Age (weeks)	27.39 $\pm$ 7.765	10	40
Social Support	64.54 $\pm$ 10.770	19	84
Variables	F	%	
Age (Years)			
<20	5	4.4	
20-35	98	86.7	
>35	10	8.8	
Level of education			
Elementary School	4	3.5	
Junior High School	11	9.7	

Senior High School	67	59.3
College	31	27.4

Variables	Frequency	Percentage
Occupation		
Doesn't work	78	69.0
Working (bound to an agency)	27	23.9
Working (Self-Employed)	8	7.1
Gestational Age		
First Trimester	14	12.4
Second Trimester	46	40.7
Third Trimester	53	46.9
Monthly Household Income		
Less than Rp. 4,000,000,- per month	57	50.4
Rp. 4,000,000 – Rp. 5,999,999,- per month	41	36.3
Rp. 6,000,000 – Rp. 7,999,999,- per month	10	8.8
More than Rp. 8,000,000,- per month	5	4.4
Parity Status		
Nullipara (not yet given birth)	53	46.9
Primipara (giving birth once)	38	33.6
Multipara (2-4 births)	22	19.5

Based on Table 1, the description of the characteristics of the respondents, it was found that the majority of pregnant women were aged 20-35 years, as many as 98 people (86.7%). In terms of education, the majority of pregnant women had a final education of high school, as many as 67 people (59.3%). In terms of work characteristics, the majority of pregnant women did not work, as many as 78

people (69.0%). Based on gestational age, the majority of pregnant women were in their third trimester when the study was conducted, as many as 53 (46.9%). In terms of household income characteristics, 57 people (50.4%) had incomes below the minimum wage (<Rp4,000,000 per month). In parity status, the majority of pregnant women are Nullipara or have never given birth, as many as 53 people (46.9%).

Meanwhile, the results of the social support analysis show that the average social support received by pregnant women during pregnancy is 64.54.

b. Description of FoC in pregnant women

Table 2 Overview of FoC in pregnant women (n-113)

Variables	Mean $\pm$ SD	f	%	Min-Max
FoC	56.51 $\pm$ 15.305	-	-	14-89
Low	-	78	69.0	
High	-	34	30.1	
Critical	-	1	0.9	

Based on Table 2, it showed the average of FoC in pregnant women is 56.51. In the categorization of the level FoC, showing the results that the majority of pregnant women have a low level of fear, as many as 78 people (69.0%).

Bivariate Analysis

Table 3 Bivariate analysis (Pearson and Spearman)

Variables	r	P-value
Age ^a	-0.377	0.000
Level of education ^b	0.101	0.285
Gestational Age ^a	0.015	0.873
Monthly Household Income ^b	0.214	0.023
Parity Status ^b	-0.470	0.000
Social Support ^a	0.000	0.997

Table 4 note: ^aPearson; ^bSpearman.

Based on Table 3, the results of the bivariate analysis showed that the age variable had a correlation coefficient (r) = -0.377 and p-value = 0.000 (p<0.01), indicating a relationship between age and FoC in pregnant women. The variable of education level had a correlation coefficient (r) = 0.101 and p-

value = 0.285 (p>0.05), indicating that there was no relationship between education level and FoC in pregnant women. Gestational age had a correlation coefficient (r) = 0.015 and p-value = 0.873 (p>0.05), indicating that there was no relationship between gestational age and FoC. Household income had a correlation coefficient (r) = 0.214 and p-value = 0.023 (p<0.05), indicating a relationship between household income and FoC in pregnant women.

Parity status showed the correlation coefficient (r) = -0.470 and p-value = 0.000 (p<0.01), indicating a relationship between parity status and FoC in pregnant women. Meanwhile, social support had a correlation coefficient (r) = 0.000 and p-value = 0.997 (p>0.05), so there was no significant relationship between social support and FoC.

Table 5 Bivariate Analysis (Kruskal-Wallis)

Work	N	Mean Rank
Working (tied to a particular agency)	27	63.93
Working (not tied to a particular agency)	8	65.00
Not working (as a housewife)	78	53.78
Chi-Square (H)	2.438	
Asymp. Say. (p-value)	0.296	

Test results Kruskal-Wallis showed no significant difference in the level of FoC based on type of work (H = 2.435, p = 0.296).

Multivariate Analysis

Table 6 Multivariate Analysis

Variables	t	P-value
Age	-0.469	0.640
Household Income	0.907	0.366
Parity Status	-4.133	0.000

Based on Table 4.4, the results of the multivariate analysis with linear regression showed that parity status has a significant impact on p-value 0.000, statistically means $p\text{-value} < 0,01$.

DISCUSSION

Bivariate test results using pearson correlation showed a significant relationship between age and FoC. The negative correlation value showed that pregnant women with younger age tend to have a higher level of FoC. These results are consistent with previous research by Albalawi et al., (2023), which stated that pregnant women aged <20 years showed higher levels of fear compared to older pregnant women. This can be caused by a lack of experience with the childbirth process and concerns about the inability to properly care for the child (Massae et al., 2021; Huang et al., 2021).

Bivariate test results using spearman revealed no significant relationship between education level and FoC. This finding showed that differences in education level do not affect the level of FoC in pregnant women.

Bivariate test results using Kruskal-Wallis showed no significant difference in FoC based on type of work. These results indicated that employment was not related to the level of FoC in this study. These results are consistent with the research of Qiu et al., (2019), which also found no significant relationship between employment status and FoC. The results of the bivariate test using Pearson Correlation showed that there was no significant relationship between gestational age and FoC. These results indicate that gestational age was not directly related to the level of FoC in this study. These results are consistent with the study of Soltani et al., (2017), which stated that although in general there is an assumption that FoC increases with increasing gestational age, their study did not find any significant relationship between the two variables.

Bivariate test results using spearman proves that there was a significant relationship between household income and FoC. The positive correlation value showed that pregnant women with higher economic status tend to have a higher level of FoC. These results are consistent with previous research by Sercekus et al., (2020), which stated that pregnant women with high economic status have a higher level of FoC. This is due to wider access to the internet and health services, which allows them to receive more information. However, information from the internet is not

entirely reliable, and incorrect or negative information can increase FoC.

Bivariate test results using spearman showed that there was a significant relationship between parity status and FoC. The negative correlation value shows that pregnant women with lower parity status tend to have a high level of FoC higher than pregnant women with multiparity status. This result is consistent with previous research by Sercekus et al., (2020), which stated that pregnant women with low parity status experience have a higher level of FoC than multiparous pregnant women. This is due to lack of experience in the childbirth process, concerns about the safety of the baby, and fear of losing control over themselves due to labor pain (Y. Huang et al., 2024).

The results of the bivariate test using pearson Correlation showed that there was no significant relationship between social support and FoC ($r = 0.000$, $p = 0.997$). These results indicated that the level of social support obtained by mothers during pregnancy was not directly related to the level of FoC in this study. This finding differs from several previous studies that stated that social support plays a role in reducing FoC (Huang et al., 2021; Zhou et al., 2021; Xu R et al., 2024). However, other studies have shown that the relationship between social support and FoC can be indirect (Julianti et al., 2023a). A study conducted by Zhou et al., (2021) found that social support has a mediating role through other

psychological factors, such as the level of antenatal depression.

The results of the multivariate analysis using Linear Regression showed that of all the variables tested, only parity status has the most dominant influence FoC in pregnant women is parity status. This finding is consistent with the research of Zhou et al., (2021), which also found that parity is the strongest factor influencing FoC. This shows that the experience of giving birth is the most important factor in determining the level of FoC.

In this study, mothers with lower parity status had higher levels of FoC than Multiparous mothers. This is in line with the theory that pregnant women who have no experience or have little experience of giving birth tend to have greater fear of the labor process due to lack of knowledge and experience in dealing with pain, as well as concerns about the safety of the baby and themselves (Huang et al., 2024).

On the other hand, multiparous mothers tend to have lower FoC levels because they already have previous childbirth experience, so they are more mentally and emotionally prepared to face the labor process (Marfuah & Ayakannu, 2025). However, in some cases, multiparous mothers who have previous negative childbirth experiences, such as obstetric complications or traumatic childbirth, can have high levels of FoC (Huang et al., 2024; Slade et al., 2019). These results indicate that although age and

household income were found to be related in the bivariate analysis, they did not have a significant effect in the multivariate test. This indicates that parity status is the main predictor in influencing the level of FoC, compared to other factors.

Clinical Implications

The findings of this study have important implications for maternal health care and antenatal nursing practice. The identification of parity status as the strongest predictor of FoC (FoC) highlights the need for early screening of FoC, particularly among nulliparous and low-parity pregnant women. Healthcare providers, including midwives and nurses, should routinely assess FoC during antenatal visits and provide targeted education and counseling tailored to women's childbirth experience and informational needs.

Younger pregnant women and those with higher household income may benefit from structured antenatal education programs that address childbirth expectations, pain management strategies, and coping mechanisms. Given that access to unverified information may exacerbate fear, healthcare professionals should guide pregnant women toward reliable, evidence-based sources and provide opportunities for open discussion to clarify misconceptions. Additionally, although social support was not directly associated with FoC in this study, integrating psychological support and monitoring maternal

mental health remains essential, particularly for women with indirect risk factors such as antenatal anxiety or depression. Implementing these strategies may enhance maternal preparedness, reduce FoC, and contribute to more positive childbirth experiences.

Study Limitations

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design limits the ability to establish causal relationships between associated factors and FoC. Second, the use of convenience sampling and recruitment from a single setting may restrict the generalizability of the results to broader populations. Third, data were collected using self-reported questionnaires, which may be subject to recall bias or social desirability bias. Lastly, this study did not explore psychological variables such as antenatal anxiety or depression, which may mediate the relationship between social support and FoC. Future studies employing longitudinal designs, larger and more diverse samples, and comprehensive psychological assessments are recommended to further clarify determinants of FoC.

CONCLUSION

From this research it can be concluded that the factors related to FoC in pregnant women, including; Age, household income, and parity status. And from the results of the analysis multivariate shows that parity status is the most influential factor FoC in

pregnant women. It is expected that the results of this study can be useful reference materials for educational institutions, libraries and health workers. It is important for health workers to provide education and psychological support to pregnant women in reducing the level of FoC. It is recommended that further researchers explore other factors that may influence FoC in pregnant women, such as psychological factors.

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Author Contributions

Dewi Marfuah contributed to the study conception and design, data collection, data analysis, and manuscript drafting. Shindy Kartika Sari contributed to data collection, data interpretation, and manuscript preparation.

Astri Mutiar contributed to data analysis and critical revision of the manuscript.

Dewi Srinatania contributed to research supervision, methodological review, and final approval of the manuscript.

All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work.

Conflict of Interest

The authors declare that there are no conflicts of interest related to this study.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request, in accordance with ethical and confidentiality considerations.

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