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ORIGINAL ARTICLE

Pregnancy Anxiety Levels and Related Factors in Women Undergoing Caesarean Section

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Abstract: Anxiety is the most common psychiatric disorder in pregnancy. Anxiety in pregnancy is related to preterm labor, fetal growth restriction, and poor neurobehavioral development. Anxiety before cesarean section can increase the need for anesthesia, postoperative analgesics, and cause an immunocompromised condition. This study aimed to assess the maternal anxiety level and related factors during caesarean section. This is a cross-sectional study using primary data from a private maternity clinic in April-May 2020. Based on defined criteria, 117 subjects were recruited for this study. Anxiety levels are assessed using the Hamilton Anxiety Rating Scale (HAM-A). Logistic regression was used to identify factors associated with anxiety level. age was 29.44±5.90 years. The mean HAM-A score was 9.90±5.80 points. High scoring HAM-A components were the anxious mood component (1.56±0.74), insomnia (sleep disturbance) (1.40±0.67), and tension (1.38±0.73). A majority of the pregnant women (76.9%) showed no anxiety about undergoing caesarean section. The rest of these pregnant women (23.1%) showed mild anxiety (13.7%) and moderate anxiety (9.4%). There was no statistically significant correlation between age, education background, income level, parity level, occupation, and history of caesarean section. Adequate analgesics, family support, and informative and educative advice about caesarean section can make pregnant women not worried about this procedure.

Keywords: Anxiety; Pregnancy; Caesarian Section; HAM-A

INTRODUCTION

Of these definitions, caesarean delivery or caesarean section (CS) defines the birth of a fetus via laparotomy and then hysterotomy. [1] Caesarean section is done if it is impossible for vaginal delivery and to reduce morbidity and mortality in mothers and babies.

The World Health Organization (WHO) defines the recommended caesarean

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section rate as 10-15% of total births. 2. According to the Indonesia National Health Registry, the caesarean section rate in Indonesia in 2018 was 17.6%, or 13.858 births out of 78.736 total births. These numbers increased from 2013, which was 9.8%. Several provinces with the highest cesarean section rates were Jakarta (31.1%), Bali (30.2%), and North Sumatra (23.9%). These numbers exceed the recommended caesarean section rate defined by WHO. [3]

There are several reasons for the persistently increased caesarean section rate. For instance, the increased prevalence of pregnancy complications such as hypertension in pregnancy, preeclampsia and gestational diabetes mellitus, placenta previa, and fetal indications such as macrosomia and malpresentation. [4]

The cesarean section also carries risks. In broad terms, cesarean delivery has higher maternal surgical risks for the current and subsequent pregnancies compared with spontaneous vaginal birth. This is balanced against lower rates of perineal injury and short-term pelvic floor disorders. For the neonate, cesarean delivery offers lower rates of birth trauma and stillbirth but greater rates of initial respiratory difficulties. Other complications are surgical site infection, bleeding, thromboembolism, and death, although very rare. This cesarean delivery risk in childbirth is a stressor that can cause anxiety in pregnant women.

Biochemical factors and stressors can affect mental health in pregnancy, mainly during perinatal. Anxiety is the most common emotional and psychiatric problem in pregnancy. Anxiety in pregnancy can affect pregnancy, such as preterm labor, fetal growth restriction, and poor neurobehavioral development. Specifically, anxiety before cesarean section can increase anesthesia use during surgery, the need for post-operative analgesics, and lead to immunocompromised conditions.

Symptoms of anxiety include sleep disturbances, fear, somatic symptoms, palpitations, lethargy or weakness, and digestive symptoms. Pregnant women respond to various stressors in pregnancy in various ways to deal with these stressors. The level of anxiety will be different for each individual depending on the individual's response. Several factors that can affect the level of anxiety in pregnant women are the number of pregnancies (parity level), age at pregnancy, education level, support from family, occupation, and income level. The level of anxiety in pregnant women before cesarean section can be measured by several questionnaires, one of which is the *Hamilton Anxiety Rating Scale* (HAM-A).

According to Pawatte in 2013, it was found that 40.1% of mothers who were going to undergo a cesarean section experienced anxiety. 5. Research by Bandini in 2014 showed that only 12.7% of

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pregnant women who were going to undergo cesarean section experienced anxiety, and this result was not significantly different from those of pregnant women who underwent vaginal delivery. [6]

From the description above, it can be concluded that several factors can influence the level of anxiety in pregnant women who will undergo a cesarean section. This study aimed to assess the anxiety level and related factors in pregnant women undergoing cesarean section.

METHOD

This study used a cross-sectional design, using primary data from outpatients visiting a private maternity clinic in Medan from April to May 2020. Both elective and cito caesarean sections are included in this study. This study used the consecutive sampling method. Singleton and term pregnancies were recruited in this study. The exclusion criteria were congenital anomalies detected during pregnancy, multiple pregnancies, incomplete data, and having a history of or having previously been diagnosed with anxiety disorders. Based on these criteria, 117 research subjects were recruited.

Maternal demographic data (age, occupation, educational background, income level, parity level, and cesarean section history) was collected using a research questionnaire. The anxiety level was assessed using the Hamilton Anxiety Rating Scale (HAM-A) questionnaire. This questionnaire consists of 14 symptom groups, which consist of more specific symptoms. Each symptom group was given a score between 0 and 4, which means a score of 0 had no symptoms (complaints), a score of 1 showed mild symptoms, a score of 2 showed moderate symptoms, a score of 3 showed severe symptoms, and a score of 4 showed very severe symptoms. Then the total value shows the anxiety level degree. The total score of less than 14 shows no anxiety; 14–20 mild anxiety; 21–27 moderate anxiety; 28–41 severe anxiety, and scores of 42–56 very severe anxiety.

Logistic regression was used to identify anxiety-related factors. Statistical analysis in this study used SPSS ver.22. P value < 0.05 was considered statistically significant.

RESULT

The characteristics of the subjects are shown in Table 1. Of the 117 subjects, the mean age of the subjects was 29.4 ± 5.9 years, 98.3% of the subjects were non-healthcare workers, 59% of the subjects were high school graduates, 35% had low income, and 36.8% of them were multiparous (history of ³ 2 pregnancies).

Table 1. Basic Subjects Characteristics

Characteristics	N (%)
Age (Mean ± SD)	**29.4 ± 5.9**
< 35 years	97 (82.9%)
≥ 35 years	20 (17.1%)

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Occupation	
Healthcare workers	2 (1.7%)
Non-healthcare workers	115 (98.3%)
Educational Background	
Primary School	3 (2.6%)
Junior High School	9 (7.7%)
Senior High School	69 (59%)
College	36 (30.8%)
Income Level	
High Income	30 (25.6%)
Middle Income	40 (34.2%)
Low Income	41 (35%)
Very Low Income	6 (5.1%)
Parity Level	
Nulliparous	39 (33.3%)
Primiparous	35 (29.9%)
Multiparous	43 (36.8%)
Caesarean Section History	
Yes	51 (43.6%)
No	66 (56.4%)
Anxiety Level	
No Anxiety	90 (76.9%)
Mild Anxiety	16 (13.7%)
Moderate Anxiety	11 (9.4%)
Total	**117 (100%)**

The prevalence of anxiety levels based on age, occupation, educational background, income level, parity level, and cesarean section history is depicted in Table 2. Only 23.1% of pregnant women showed mild anxiety (13.7%) and moderate anxiety (9.4%). There was no statistically significant correlation between age, occupation, educational background, income level, parity level, and cesarean section history with anxiety level ($P > 0.05$).

Table 2. Anxiety Level Based on Associated Factors

Characteristics	No Anxiety (N and %)	Anxiety (N and %)	p-value
Age (Mean ± SD)			
< 35 years	73 (75.3%)	24 (24.7%)	0.47
≥ 35 years	17 (85%)	3 (15%)	
Occupation			
Healthcare workers	2 (100%)	0 (0%)	0.99
Non-healthcare workers	88 (76.5%)	27 (23.5%)	
Education Background			
Primary School	1 (33.3%)	2 (66.7%)	0.46
Junior High School	7 (77.8%)	2 (22.2%)	
Senior High School	56 (81.2%)	13 (18.8%)	
Undergraduate	26 (72.2%)	10 (27.8%)	
Income Level			
High Income	19 (63.3%)	11 (36.7%)	0.15
Middle Income	36 (90%)	4 (10%)	
Low Income	31 (75.6%)	10 (24.4%)	
Very Low Income	4 (66.7%)	2 (33.3%)	
Parity Level			
Nulliparous	31 (79.5%)	8 (20.5%)	0.87
Primiparous	26 (74.3%)	9 (25.7%)	
Multiparous	33 (76.7%)	10 (23.3%	
Caesarean Section History			
Yes	52 (78.8%)	14 (21.2%)	0.58
No	38 (74.5%)	13 (25.5%)	

DISCUSSION

This study showed that the majority of pregnant women (76.9%) showed no anxiety about undergoing cesarean section.

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A previous study by Sun et al.[4] showed that the majority of pregnant women did not experience anxiety before delivery, either vaginally or by cesarean section, and this study gave the same results. These results might be one of the related factors to the increasing caesarean section rate in Indonesia, because currently the majority of pregnant women do not have anxiety about caesarean section.

The anxiety level was not affected by age, occupation, educational background, income level, parity level, and caesarean section history. Previous research by Bandini et al.6 found that age, educational background, parity level, income level, occupation, and marital status have no effect on anxiety in pregnant women before delivery. This result illustrates the anxiety level of pregnant women undergoing cesarean section is affected by other factors such as support from their husband or family, complications in pregnancy or childbirth (such as prolonged labor, preeclampsia, and other complications), and fear of vaginal delivery.

From the HAM-A questionnaire, the anxiety level of pregnant women undergoing cesarean section was mainly due to experience in previous cesarean sections, such as postoperative pain and neonatal outcomes, requiring further treatment. Anxiety about cesarean section is also affected by the type of cesarean section that is *scheduled* or emergency and the experience of close family members who have had postoperative complications.

Thus, the use of adequate post-operative analgesics to reduce pain, comprehensive neonatal care, family support, and informative education about cesarean section can reduce anxiety in pregnant women undergoing cesarean section.

This study has limitations and advantages. One of the limitations is this study did not compare the level of anxiety among cesarean surgery performed electively and *cito* (emergency), because in previous studies, pregnant women with cesarean section, antepartum anxiety levels are higher than the vaginal delivery.[7] However, this study also has advantages, one of that is this study is one of the few studies that assess several maternal characteristics to anxiety levels. The results and information of this study are expected to encourage further research on anxiety level of pregnant women undergoing cesarean section.

CONCLUSION

The majority of the pregnant women expressed no concern about having a cesarean section. The anxiety level was not affected by age, occupation, educational background, income level, parity level, and caesarean section history. These results might be one of the related factors to the

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increasing caesarean section rate in Indonesia, because currently the majority of pregnant women do not have anxiety about caesarean section. The use of adequate post-operative analgesics to reduce pain, comprehensive neonatal care, family support, and informative education about cesarean section can reduce anxiety in pregnant women undergoing cesarean section.

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