

# Prevalence of Severe Anxiety among Elective Caesarean Section Mothers and their Perceived Complications of Anaesthesia in Malaysia

<sup>1</sup>Dr. Muralitharan Perumal, <sup>1</sup>Dr. Mohd Rohisham B. Zainal Abidin, <sup>1</sup>Dr Gan Poh Tian<sup>1</sup>, Dr. Neeshantin Krisnamurthy, <sup>1</sup>Dr. Elanngovan Nagandran, <sup>1</sup>Dr. Chua Soon Kyit<sup>1</sup>, <sup>1</sup>Dr. Lim Ping Sheng, <sup>1</sup>Dr. Yap Soong Yiing, <sup>1</sup>Dr. Jacelyn Ong Jia Whey, <sup>1</sup>Dr. Thavamani@ramu a/p Manoharan, <sup>1</sup>Dr. Sandra Subatra a/p Kuppusamy, <sup>2</sup>Dr. Zubaidah Jamil Osman, <sup>3</sup>Karuthan Chinna

<sup>1</sup>Hospital Tengku Ampuan Rahimah, 41200 Klang, Malaysia

<sup>2</sup>Cyberjaya University College of Medical Sciences, 6300 Cyberjaya, Selangor

<sup>3</sup>UCSI University, 56100 Cheras, Kuala Lumpur, Malaysia

## Abstract

**Introduction:** Many women experience psychological problems during pregnancy. One of the major psychological problems is anxiety. Pregnancy related anxiety can lead to various negative effects not only on mother's health, but also on their socio-dynamic factors as well as the infant's development. Preoperative anxiety among obstetric patients is known to be much higher compared to other surgical patients. **Aim:** In this study we assessed the prevalence of severe anxiety among elective caesarean section mothers and their perceived complications of anaesthesia in Malaysia. **Method:** This study was conducted among 280 pregnant women in the obstetrics and gynaecology department in a tertiary hospital in Malaysia. The pregnant women's level of anxiety was assessed using the 20-item S-anxiety scale, preoperative and postoperative. **Results:** Pre-operative, out of the 280 respondents, 70 (25%) were classified as having severe anxiety. Among those with previous SVD, 41.7% had severe level of anxiety compared to only 21.2% among those with previous LSCS ( $p=0.008$ ). At post-operative assessment, 27 (9.6%) were classified as having severe anxiety. Overall, there was a significant reduction in the level of anxiety from pre to post operative ( $p < 0.001$ ). The perceived complications from general anaesthesia were death (34.3%), coma (32.1%) and postoperative pain (30%) and the perceived complications from regional anaesthesia were back pain (27.9%) and paralysis (27.9%). **Conclusion:** Preoperative anxiety in women undergoing caesarean section is high. Preoperative anxiety should be evaluated for further planning of coping strategies to overcome their anxiety and fear.

**Keywords:** Elective caesarean section; Anxiety; Perceived complications.

## Introduction

Anxiety is an anticipation of a future concern which is usually associated with physical symptoms such as muscle tension and avoidance behaviour.<sup>(1)</sup> Physical anxiety can be misunderstood as fear, an emotional

response to an immediate threat which triggers a fight or flight response.<sup>(1)</sup> Many women experience psychological problems during pregnancy. One of the major psychological problems is anxiety. Pregnant women may endure psychological problems during

antenatal, perinatal, and postnatal periods.(2-4) Lately, pregnancy anxiety has been highlighted and discussed extensively as a healthcare problem.(5) . As compared to general surgical populations, preoperative anxiety has been found to be higher among obstetric patients (6,7). There are several definitions for pregnancy related anxiety. Bayrampour et al defined pregnancy related anxiety as “nervousness and fear about the baby’s health, the mother’s health and appearance, experience with the healthcare system, social and financial issues in the context of pregnancy, childbirth and parenting that are accompanied by excessive worry and somatic symptoms.” (8) Pregnancy related anxiety can lead to various negative effects not only on mother’s health, but also on their socio-dynamic factors as well as the infant’s development.(5)

During the course of pregnancy, some women with high levels of anxiety would have missed more days of work, some might have made more obstetrical visits due to anxiousness, and some would have required more analgesics during labour and delivery. High levels of anxiety in pregnant women are associated with poorer self-care due to psychological distress, which in turn could increase the risk of poor nutrition and substance use. It can also lead to undesirable pregnancy outcomes such as low birth weight, preterm birth, and obstetric complications. It can also impair mother- infant relationships. It is known that anxiety increases the risk of developing depression in mothers by threefold (9). There are also negative implications for the child, such as respiratory illnesses, digestive problems, difficult infant temperament and emotional problems, delayed motor development, problems in attention and emotional regulation (5).

In Malaysia, the National Health and Morbidity Survey (NHMS) reported the prevalence of poor mental health among Malaysian women as 12.1% (10). A study by Ariffin et al on a local population reported that 22.5% of the mothers had antenatal anxiety. (12) In a cohort study, Nasreen et al reported that 28.8% of Malaysian mothers had antenatal anxiety symptoms. (13) A systematic review and meta-analysis by Dennis et al found that 24.6% women had self-

reported anxiety symptoms in their third trimester. (14) Although preoperative anxiety has been studied in the general surgical population, but the effect of anxiety on patients undergoing elective caesarean section has not been explored.

In previous studies, several factors such as have socio-demographic variables (maternal age, education level, marital status), biomedical variables (gender of infant, parity), psychological variables (antenatal depression, satisfaction with marital status, low self-esteem, and tradition post-partum practice related variable (food taboos during confinement) have been associated with anxiety among pregnant women (4,9,11,15). A study reported that most women are anxious about obstetric anaesthesia (6).

In this study we assessed the prevalence of severe anxiety among elective caesarean section (ECS) mothers and their perceived complications of anaesthesia in Malaysia.

## Methodology

### Study population

This study was conducted in the obstetrics and gynaecology department in a tertiary hospital in Klang, between December 2020 and July 2021. On the average, 3 to 5 patients undergo ECS at this facility, daily. In this hospital, the ECS patients are admitted one day prior to ECS. Using the results reported by Nasreen et. Al (2018), for a 95% confidence interval, 5% margin of error, the minimum required sample size was 227 (13). Allowing for a 20% dropout rate, the ultimate sample size was 273.

### Study instrument

In this study, the State-Trait Anxiety Inventory (STAI) that was developed by Spielberger, Gorsuch, Lushene, Vagg, & Jacobs (16) was used. STAI is a self-report questionnaire that used for the assessment of severity of current symptoms of anxiety and the tendency to be anxious (16). There are two subscales in STAI; state anxiety scale (S-anxiety) and Trait anxiety scale (T-anxiety). In this study only the 20-item

S-anxiety scale was used. Each question is measured on a scale of 1-4, 'almost Never' to 'Almost Always'. The total score for the 20 items ranged from 20-80, high scores indicating a high level of anxiety. Based on the developers, a score of  $\geq 46$  is classified as having severe anxiety. For S-anxiety, the test-retest reliability ranged from 0.31 and 0.86, and for its internal consistency, the Cronbach alpha's coefficients ranged from 0.86- to 0.95. (16)

#### Data Collection

Upon admission, first, the ECS mothers had their preoperative assessment by the obstetric anaesthesiologist. Then the study team approached these ECS mothers to determine their eligibility to be included in the study. The mothers were briefed on the purpose of the study and written consents were taken from those who were willing to participate in the study. The questionnaire was self-administered among the mothers to assess their level of anxiety, preoperatively. The following day the mothers had their ECS done, and 24 hours post ECS, when the mothers returned to ward, the questionnaire was administered again to assess their level of anxiety, post-operatively. Any mothers who were admitted to critical care after ECS were excluded from this study. Mothers who were identified as suffering from severe anxiety (S-anxiety score  $\geq 46$ ) attended a close-structured qualitative interview session to determine their concerns.

#### Data analysis

Quantitative data were analysed using IBM SPSS version 26. Variables were described as frequencies and percentages. Change in anxiety, between pre and post-surgery, was tested using McNemar's test. The p-value was set as 0.05. Data from the interviews were analysed and described as frequencies and percentages.

### Results

In this study, there were a total of 280 ECS mothers. The demographic characteristics of

the mother are shown in Table 1. The mean age of the respondents was  $33.0 \pm 4.4$  years. Majority (80.4%) of the mothers had some form of comorbid. Among the mothers, 53.6% had secondary level of education and 43.2% were not employed. Out of the 280 mothers, 75.7% had previous LSCS, 12.9% had previous SVD and for 11.4%, it was their first pregnancy.

Table 1. *Socio-demographic characteristics of the respondents in the study*

Variable	N (percentage)
Age (mean $\pm$ SD)	33.0 $\pm$ 4.4 years
Comorbid	
Yes	225 (80.4)
No	55 (19.6)
Education level	
Secondary	150 (53.6)
Tertiary	130 (46.4)
Employment	
Working	159 (56.8)
Not working	121 (43.2)
Previous childbirth	
LSCS	212 (75.7%)
SVD	36(12.9%)
None	32(11.4%)

At baseline (pre-operative), the minimum anxiety score was 24 and the maximum score was 74. Out of the 280 respondents, 70 (25%) were classified as having severe anxiety. Among those with previous SVD, 41.7% had severe level of anxiety compared to only 21.2% among those with previous LSCS ( $p=0.008$ ). At post-operative assessment, 27 (9.6%) were classified as having severe anxiety. Overall, there was a significant reduction in the level of anxiety from pre to post operative ( $p < 0.001$ ). Out of the 70 respondents who had severe anxiety preoperatively, only 17 (24.3%) remained severely anxious postoperatively. Among the 210 with less anxiety preoperatively, 10(4.8%) were more anxious postoperatively (Table 2).

Table 2. *Changes in level of anxiety in ECS women pre- and postoperatively*

Pre-operative	Post-operative		Total	<i>p</i> -value
	Severe	Not severe		
Severe	17 (24.3%)	53 (75.7%)	70	<0.001
Not severe	10 (4.8%)	200 (95.2%)	210	
Total	27	253	280	

One-to-one interviews were conducted among the 27 ECS mothers who had severe anxiety post-operative. Based on their responses the complications from general anaesthesia they were most anxious about were death (34.3%), coma (32.1%) and postoperative pain (30%). These levels of anxiety were similar regardless of the presence of comorbid or a previous history of general anaesthesia. The complications from regional anaesthesia they were most anxious about were back pain (27.9%) and paralysis (27.9%) These levels of anxiety were similar regardless of their parity, their history of past mode of deliveries or a previous history of regional anaesthesia.

## Discussion

The objective of the study is to determine the prevalence of anxiety among women undergoing elective caesarean section (ECS) and to identify the complications they are most concerned with. In this study, 25% of ECS mothers had severe anxiety, preoperative. In this study, the prevalence of severe anxiety was significantly lower among those who had previous LSCS. In a cross-sectional study in Ethiopia by Ferede et al, the prevalence of preoperative anxiety among obstetric patients was 63%, higher in emergency caesarean section patients as compared to elective patients and lower in women who had previous exposure to anaesthesia. (17) The varying prevalence rates of anxiety among pregnant women in these studies may be due to usage of different measures, and differences in population and study settings. In this study, we observed a significant reduction in the anxiety level postoperatively.

As for complications due anaesthesia, the mothers in this study were most anxious about

death, coma and postoperative pain. A study by Burkle et al. showed that fear of death was the biggest cause of anxiety. (18) In a study by Celik et al, it was found that patients feared postsurgical pain the most, followed by waking up during the surgery and death. (19) Ruhaiyem et al reported the most common concerns when undergoing general anaesthesia were fear of postoperative pain, fear of intraoperative awareness and fear of being sleepy postoperatively. Compared to other studies, we did not include concerns like “inadequacy of the anaesthetist”, and “fear of drains and needles”. (20)

Serious complications following central neuraxial blockade (CNB) are rare. The UK's National Anaesthesia Audit Project 3 reported the incidence of permanent harm following obstetric CNB as between 1 in 80,000 and 1 in 320,425. Though uncommon, neurological deficit is a catastrophic complication of CNB. This explains the higher prevalence in anxiety for back pain and paralysis following a regional anaesthesia/ CNB. (21)

## Conclusion

Preoperative anxiety in women undergoing caesarean section is a common and significant issue that warrants medical attention. The anxiety significantly decreased postoperatively and the reduction in anxiety was not associated with education level, presence of any comorbid or a previous history of general/ regional anaesthesia. We recommend that all obstetric patients should be scheduled for detailed preoperative maternal counselling sessions in order to identify the presence of pregnancy-related anxiety and for further planning of coping strategies to overcome their fear.

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