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Partner anxiety and its associated factors before elective caesarean section

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Abstract

Objective: This study aimed to assess the partner anxiety and its associated factors before elective caesarean section at a tertiary hospital in South India.

Background: Anxiety is a behavioural expression of stress and an unpleasant feeling that can be brought on by a number of factors. The information given to the pregnant woman and her husband regarding caesarean delivery could create anxiety. Spouses who assist in caring for their wifes' during childbirth may be subjected to mild to severe anxiety.

Materials and Methods: A descriptive study was carried out among 200 spouses of pregnant women planned for elective caesarean section. The State Trait Anxiety Inventory, the Partner Anxiety Associated Factors Checklist were used.

Results: The mean score of state inventory was 44.245 (±9.30) and trait inventory was about 23.145 (±7.11) and partner anxiety associated factors checklist was 19.94 (±6.54). A significant association was found with a p value < 0.05 between the education and State Anxiety Inventory (p value – 0.041), Trait Anxiety Inventory (p value – 0.024); between job and State Anxiety Inventory (p value – 0.046) and Partner Anxiety Associated factor Checklist (p value – 0.026); income and State Anxiety Inventory (p value – 0.031), Trait Anxiety Inventory (p value – 0.008); the years of marriage and Partner Anxiety Associated factor Checklist (p value – 0.022).

Conclusion: Nurses and Obstetricians need to provide family-centred pre-operative counselling, understand the psychological factors that contribute to caregivers' anxiety and include them in pre-anaesthesia counselling.

Keywords: Partner; Anxiety; Elective; Caesarean section

1. Introduction

A Caesarean birth, or Caesarean-section (C-section), involves surgical incision on the abdomen and uterus of the pregnant woman in order to deliver the baby. According to the World Health Organisation (WHO), a caesarean section is a surgical procedure that can save the life of a woman and her baby when undertaken for medical reasons. According to National Family Health Study report 2019-2021, the prevalence of C-section deliveries in Tamil Nadu private sector has raised from 52.7% (NFHS 2015-2016) to 64.2% (NFHS 2019 - 2021) and public sector has raised from 27.6% (NFHS 2015-2016) to 38.9% (NFHS 2019 - 2021). This indicates that consequently, over the past ten years, there has been a rise of C-section rates [1]

The pregnant women are looked after by care takers. It may be a female family member or the spouse. The care taker is typically responsible for providing care when the pregnant woman is going through an acutely stressful events like a surgery. It has been discovered that the wellbeing of these care takers is disrupted both physically and emotionally.

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Notable issues in the caregiving experience include higher anxiety and an increase in carer load after surgery. Over the last ten years, research on cancer patients and non-elderly populations has been added to this body of literature. It is now less clear, though, that the same pattern of findings holds true following surgery, such as a caesarean section. Spousal and adult caregivers differ on several dimensions of subjective caregiver burden and anxiety and on the objective stressors that influence levels of burden experienced. Hence this study was designed to assess the partner anxiety before elective caesarean section in a tertiary hospital at Vellore, Tamil Nadu, South India. The objectives of the study are as follows:

- To assess the level of anxiety among partners (spouse) of antenatal women before elective caesarean section.
- To identify the factors associated with anxiety among partners (spouse) of antenatal women before elective caesarean section.
- To determine the association between the level of anxiety among partners (spouse) of antenatal women before elective caesarean section with socio demographic variables and clinical variables.

2. Materials and Methods

Descriptive research was carried out in the postnatal wards of the Department of Obstetrics and Gynecology at a tertiary hospital in Vellore, Tamil Nadu, South India. A total of 200 partners were included in the study.

2.1. Study design

Descriptive research design

2.2. Study duration

4 months

2.3. Sampling technique

Convenient sampling technique was used to select the samples for the study.

2.4. Inclusion criteria

Partners of antenatal women 1) posted for primary and repeat elective caesarean section 2) comprehending Tamil or English 3) having had a minimum of one antenatal visit in the tertiary hospital (study setting) 4) whose gestational age more than 36 weeks

2.5. Exclusion criteria

Partners of antenatal women 1) physically or mentally challenged 2) shifted to intensive care unit post-operatively to manage the complications 3) whose babies admitted into neonatal intensive care unit after birth 4) conceived by artificial reproductive techniques 5) with congenital anomalies in the fetus or multiple gestation.

2.6. Sample Calculation

Based on Partner anxiety prior to elective caesarean section under regional anaesthesia, I. R. Taylor, A. S. Bullough, J. C. M. van Hamel and D. N. C. Campbell, 2001). Literatures reported an anxiety of 28~~40~~% among husbands. To detect this, we need a sample of 200 subjects with 95% CI and 7% precision.

2.7. Data collection procedure

The investigator co-investigator visited the obstetrical wards from monday to friday: 8 am - 4 30 pm, saturday: 8 am - 12:30 pm. A list of all the antenatal women posted for caesarean section was prepared. Samples were selected using convenience sampling technique. Written informed consent was obtained. Data was collected in the ward classroom or in the bed side where adequate privacy was ensured. 10-15 minutes was taken to complete the questionnaire.

2.8. Data collection instruments

Data collection instrument consisted of three sections.

2.9. Demographic variables

Age, education, occupation, religion, locality of living, type of family, monthly income, type of payment, marital status, years of marriage

2.10. Clinical variables

Parity, co-morbidity, previous history of caesarean section, current indication for caesarean section.

2.11. Spielberger State Trait Anxiety Inventory (STAI)

This inventory was developed by Spielberger et al. STAI is a four-point Likert-type scale ranging from "almost never" to "almost always" and measures state and trait anxiety levels separately with 20 questions for each. It was filled out by the participants themselves to determine their anxiety levels. The total score obtained from both scales varies between 20 and 80. High scores on the scale indicate high levels of anxiety and low scores indicate low levels of anxiety. The alpha reliability coefficient ranged between 0.94 and 0.96 for the state anxiety scale and between 0.83 and 0.87 for the trait anxiety scale.

2.12. Partner Anxiety Associated Factors Checklist

It was prepared by the investigator based on risk factors identified in previous studies. It included 10 statements of factors causing anxiety rated as "Never", "Sometimes", "Often", "Always". The participants were asked to choose the most appropriate statement of their choice.

2.13. Statistical methods

Data was summarized using mean (SD)/median (IQR) for continuous variables and frequency along with percentage for categorical variables. The anxiety was presented with 95% CI. The clinical and demographical association with anxiety was analysed using chi-square statistics. To find the determinants of anxiety logistic regression was used and odds ratio was presented with 95% CI. Statistical significance was assessed at $p<0.05$ for all the parameters. All statistical analysis was performed using SPSS (IBM® SPSS Statistics version 22.0).

3. Results

Table 1 Distribution of partners based on socio-demographic and clinical variables. (n= 200)

Sr. No	VARIABLES	Freq.	Percentage (%)
1	Age	Mean - 33.68 [SD - 4.75]	
2	Education		
	Illiterate	2	1.00
	Primary school	19	9.50
	Secondary school	49	24.50
	Higher secondary school	63	31.50
	Graduate	27	13.50
	Post Graduate	40	20
3	Occupation		
	Unemployed	28	14
	Skilled worker	63	31.50
	Business	20	10
	Private employee	89	44.50
4	Religion		
	Hindu	163	81.50

	Muslim	19	9.50
	Christian	18	9
5	Locality of living		
	Urban	83	41.50
	Rural	117	58.50
6	Type of family		
	Joint family	98	49
	Nuclear family	85	42.5
	Extended family	17	8.5
7	Monthly Income		
	Less than Rs.4999	36	18
	Rs.5000 – Rs.15000	63	31
	Rs.15001- Rs.30000	52	26
	Above Rs.30001	49	24
8	Type of payment		
	Self-payment	137	68.50
	Insurance	63	31.50
9	Parity		
	Primiparity	43	21.50
	Multiparity	157	78.50
10	Marital Status		
	Married	200	100
	Divorced	0	0
11	Years of marriage		
	Less than a year	18	9
	1-5 years	110	55
	6-10 years	53	26.50
	11 years and above	19	9.50
12	Previous history of Caesarean Section		
	Yes	161	80.50
	No	39	19.50
13	Indication		
	Previous LSCS	161	80.50
	Malpresentation	26	13
	Bad Obstetrical History	6	3
	Fetal Growth Restriction	4	2
	Placenta Previa	2	1
	Multiple gestation	1	0.50

Table 1 shows that the mean age of partners was 33.68 (SD±4.75), 98% were educated and 44.50% were working in private companies. 81.50 % of the subjects belonged to hindu religion and resided in rural area (58.50%) as joint family (49%). 31.50% of the subjects earned less than 15,000/- and 68.50% had done self-payment. 78.50% of antenatal women posted for elective caesarean section were multipara with a marriage duration of 1-5 years (55%). Mostly (80.50%) of mothers were posted as elective with an indication of previous LSCS (80.50%).

Table 2 Distribution of overall mean and standard deviation of the partners based on Spielberger State Trait Anxiety Inventory and Partner Anxiety Associated Factors Checklist (n= 200)

Variables	**Frequency**	**Mean**	**Standard Deviation**	**[95% Confidence Interval]**	
State Anxiety Inventory	200	44.245	9.30	42.9481	45.5419
Trait Anxiety Inventory	200	23.145	7.11	22.1538	24.1362
Partner Anxiety Associated Factors Checklist	200	19.94	6.54	19.028	20.852

Table 2 shows that the mean score of partner anxiety before elective caesarean section for state anxiety inventory was 44.245 (SD ± 9.30), trait anxiety inventory was 23.14 (SD ± 7.11). This indicates mild anxiety as a score of 49 and below is indicated as mild anxiety. The mean score of partner anxiety associated factors checklist was 19.94 (SD ± 6.54) indicating mild anxiety.

Table 3 Distribution of mean and standard deviation of the partners based on Spielberger State Trait Anxiety Inventory and Partner Anxiety Associated Factors Checklist (n= 200)

Sr. No	**Variables**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**
	Overall State Inventory	**44.24**	**9.30**	**20**	**80**
1	I feel calm	2.66	0.94	1	4
2	I feel secure	3.07	0.96	1	4
3	I am tense	2.29	0.96	1	4
4	I am regretful	2.06	0.95	1	4
5	I feel at ease	2.69	1.06	1	4
6	I feel upset	1.97	0.96	1	4
7	I am currently worried about possible misfortunes	1.71	0.93	1	4
8	I feel rested	2.24	0.88	1	4
9	I feel anxious	2.15	0.94	1	4
10	I feel comfortable	2.30	1.03	1	4
11	I feel self-confident	3.06	0.95	1	4
12	I feel nervous	2.01	0.95	1	4
13	I am jittery	1.91	0.94	1	4
14	I feel high- strung	2.23	1.05	1	4
15	I am relaxed	2.71	0.96	1	4
16	I feel content	2.83	0.96	1	4
17	I am worried	2.08	0.94	1	4

18	I feel over-excited and rattled	2.35	0.94	1	4
19	I feel joyful	2.76	0.94	1	4
20	I feel fine	2.83	0.90	1	4
	Overall Trait Inventory	**23.14**	**7.11**	**20**	**80**
21	I feel fine	2.86	0.99	1	4
22	I tire quickly	1.96	0.79	1	4
23	I feel like crying	1.74	0.73	1	4
24	I wish I could be as happy as others seem to be	2.47	1.11	1	4
25	I am losing opportunities because I cannot make decisions fast	1.78	0.87	1	4
26	I feel rested	2.31	0.96	1	4
27	I am calm	2.46	0.99	1	4
28	I feel that difficulties are piling up in a way that I cannot overcome them	1.95	0.86	1	4
29	I worry too much about things that do not really matter	1.77	0.84	1	4
30	I am happy	2.89	0.93	1	4
31	I am inclined to things hard	2.27	1.01	1	4
32	I lack self-confidence	1.81	0.96	1	4
33	I feel secure	3.02	1.01	1	4
34	I try to avoid facing a crisis or difficulty	2.23	1.00	1	4
35	I feel blue	1.75	0.80	1	4
36	I am content	2.74	0.95	1	4
37	Some unimportant thoughts run through my mind and bother me	1.90	0.86	1	4
38	I take disappointments so keenly that I cannot get them out of my mind	1.79	0.93	1	4
39	I am a steady person	3.02	1.09	1	4
40	I become tense and upset when I think about my current concerns	1.97	0.88	1	4
	Partner Anxiety Associated Factors Checklist -Overall	**19.94**	**6.54**	**10**	**40**
41	Waiting for operation	2.02	0.96	1	4
42	Postoperative pain for my wife	2.45	0.94	1	4
43	Outcome of surgery	2.08	1.11	1	4
44	Death of the partner	1.35	0.81	1	4
45	Anaesthesia and recovery	1.75	0.96	1	4
46	Administration of IV fluids and blood transfusion	1.70	0.92	1	4
47	Length of hospital stay	2.10	0.98	1	4
48	Financial crisis	2.43	0.98	1	4
49	Availability of caregiver	2.21	1.18	1	4
50	Availability of support	1.84	1.13	1	4

Table 4 Distribution of partners based on association of Spielberger State Trait Anxiety Inventory and Partner Anxiety Associated Factor Checklist with socio demographic and clinical variables (n= 200)

Sr. No	Variables	Frequency	State Inventory	p Value	Trait Inventory	p Value	Partner Anxiety Associated Factor Checklist	p Value
1	Education							
	Primary school	21	48.095(9.322)		25.571(7.966)		17.238(5.108)	
	Secondary school	49	44.653(8.913)		22.592(6.667)		20.102(7.425)	
	Higher Secondary school	63	45.365(9.460)	0.0417*	24.619(7.549)	0.0241*	20.952(7.012)	0.2642
	Graduate	27	42.222(9.370)		22.741(6.352)		19.519(5.529)	
	Post Graduate	40	41.325(8.745)		20.500(6.222)		19.850(5.722)	
2	Occupation							
	Unemployed	28	46.179(9.238)		24.250(7.132)		22.250(6.246)	
	Business	63	44.571(9.510)	0.0469*	24.190(8.382)		19.778(7.589)	0.0266*
	Government Employee	20	38.950(7.742)		20.600(5.960)	0.1665	16.500(4.059)	
	Private Employee	89	44.596(9.220)		22.629(6.211)		20.101(6.017)	
3	Religion							
	Hindu	163	43.699(8.606)	0.2189	22.687(7.011)	0.113	19.552(6.103)	0.1937
	Muslim	19	46.474(11.330)		24.211(8.397)		22.105(9.195)	
	Christian	18	46.833(12.468)		26.167(5.953)		21.167(6.930)	
4	Type of family							
	Joint family	98	44.520(8.913)	0.5334	23.224(7.450)	0.6147	20.184(6.743)	0.2506
	Nuclear family	85	44.412(9.339)		23.376(6.655)		19.247(5.896)	
	Extended family	17	41.824(11.381)		21.529(7.509)		22.000(8.155)	
5	Income							
	Less than Rs.5000	36	44.722(7.945)		24.750(7.944)		19.194(6.462)	
	Rs.5001 – Rs.15000	63	45.857(6.329)		24.683(6.789)		20.302(6.779)	

	Rs.15001- Rs.30000	52	45.115(11.292)	0.031*	22.596(6.356)	0.0084*	20.442(6.614)	
	Above Rs.30001	49	40.898(10.467)		20.571(6.991)		19.490(6.325)	0.756
4	Years of marriage							
	Less than 1 year	18	45.500(8.284)		24.444(7.278)		19.500(5.021)	
	1-5 Years	110	45.318(8.906)		23.209(6.561)		21.182(7.031)	
	6-10 Years	53	42.415(10.509)	0.1715	22.566(8.109)	0.8128	18.113(6.216)	0.0229*
	More than 11 Years	19	41.947(8.256)		23.158(7.433)		18.263(3.970)	
5	Locality							
	Urban	83	45.145(10.039)	0.2503	23.831(7.503)	0.2511	20.241(6.534)	0.5849
	Rural	117	43.607(8.728)		22.658(6.805)		19.727(6.565)	
6	Payment							
	Self-payment	137	44.518(9.626)	0.5414	23.299(7.361)	0.652	20.095(6.704)	0.6226
	Insurance	63	43.651(8.595)		22.810(6.569)		19.603(6.210)	
7	Parity							
	Primi-parous	43	45.116(8.987)	0.4895	24.256(6.032)	0.2484	18.395(6.474)	0.0805
	Multi-parous	157	44.006(9.399)		22.841(7.364)		20.363(6.515)	
8	Previous LSCS							
	Yes	161	44.255(9.549)	0.9763	22.870(6.901)	0.2666	20.099(6.644)	0.4852
	No	39	44.205(8.314)		24.282(7.901)		19.282(6.134)	
9	Current indication							
	Previous LSCS	161	44.255(9.549)	0.9763	22.870(6.901)	0.2666	20.099(6.644)	0.4852
	~~All~~ Others	39	44.205(8.314)		24.282(7.901)		19.282(6.134)	

Table 3 shows that notably, partners experienced a wide range of emotions before their spouse elective caesarean section. A majority of men reported that they felt secure 3.07 (SD ± 0.96) and felt self-confident 3.06 (SD ± 0.95), whereas some had reported that they felt worried with a mean score of 2.08 (SD ± 0.94) and some of them reported that they avoided facing difficulty or crisis with a mean score of 2.23 (SD ± 1.00). Most of them reported that their anxiety was associated with post-operative pain with a mean score of 2.45 (SD ± 0.94) rather than outcome of surgery with a mean of 2.08 (SD ± 1.11)

Table 4 reveals there is significant association with a p value < 0.05 between the education and Spielberg State (p value – 0.041) Trait (p value – 0.024) Anxiety Inventory, job and Spielberg State (p value – 0.046) Trait Anxiety Inventory and Partner Anxiety Associated Factor Checklist (p value – 0.026), income and Spielberg State (p value – 0.031). Trait Anxiety Inventory (p value – 0.008). Years of marriage and Partner Anxiety Associated Factor Checklist (p value – 0.022).

4. Discussion

Partners' average age was 33.68(SD±4.75), 98% had a college degree and 44.50% worked for private businesses. 81.50% of the participants were identified as Hindu, living in a rural location (58.50%) as a joint family (49%), 31.50% made less than Rs.15,000, and 68.50% paid for themselves. Multipara moms made up 78.50% of the mothers listed for elective LSCS, and 55% of them had been married for 1–5 years. Mothers were primarily (80.50%) listed as elective, with 80.50% indicating prior LSCS. In a 2021 study on partner anxiety before the elective surgery, Taylor found similar results. The average partner's age was 33, and 96.7% of them were working, with an 84.6% literacy rate.[1]

In the state inventory, the mean score was 44.245 (SD ± 9.30); in the trait inventory, it was approximately 23.145 (SD ± 7.11); and in the partner anxiety associated factors checklist, it was 19.94 (SD ± 6.54). Many participants reported feeling safe and "I am a steady person" based on the higher mean score of 3.02 (SD ± 1.09). The majority of individuals expressed confidence in their ability to handle any potential difficulties because it's a repeat caesarean section (80.50%) and their spouses were admitted to a tertiary care facility.

The average score of the partner anxiety-related factors showed that the majority of them cited their spouses' impending surgery-related pain 2.45 (SD ± 0.94) and financial difficulties as the main causes of their anxiety 2.43 (SD ± 0.98). Due to the caregiver's availability 2.2 (SD ± 1.18), some partners stated that the length of their hospital stay 2.10 (SD ± 0.98) and waiting time 2.10 (SD ± 0.96) caused them to be apprehensive. Similar finding was reported in a study conducted by Corsano et al in the year 2015[2].

Remarkably few men alone had expressed concern regarding anaesthesia and recovery 1.75 (SD ± 0.96), as well as potential outcome of surgery 2.08 (SD ± 1.11). Interestingly, only slightly more than half acknowledged having anxiety related to ~~anaesthetic~~ anaesthesia. This could indicate a lack of knowledge or justification for possible side effects, the conviction that anaesthesia is completely safe, or even a misinterpretation of the phrase itself. Although they are rare, maternal deaths directly related to anaesthesia do happen [3].

According to a study conducted in the UK by Taylor in 2001[1], 90% of the partners expressed concern about the mother and child's safety, and 62.6% expressed concern about being present during the procedure, which is common practice in the Western countries. It also cited that, patients who had undergone a surgery before did not report less fear during follow-up procedures. A safe outcome for mother and child was, predictably, the top worry for partners (94.5% and 92.3%, respectively) in the present study. The length of the hospital stay was obviously not a major problem. According to the current study's findings and comments, partners of women undergoing LSCS also reported the same.

All patients scheduled for elective caesarean sections are evaluated in a pre-anaesthesia evaluation clinic, which is open to their partner. Either one of the specialty registrars or a consultant anaesthetist with expertise in obstetric anaesthesia oversees the clinic. After filling out a standardized assessment form, the process is explained and any queries are addressed. There might be some self-selection at play; people who are prone to anxiety might be more likely to visit the clinic and run a higher chance of feeling worried after hearing the information. Information about the intervention's potential negative effects might actually increase people's anxiety levels, while information about its benefits might be more beneficial. The informed consent procedure would be obviously compromised, though, if patients and/or their partners were not informed of any potential unfavourable outcomes. Although it is well known that the majority of people want to see their anaesthetist before surgery, knowing certain details regarding medical care can unavoidably create undue distress. [4, 5]

With a significant correlation of p = 0.03 and 46% of them being unemployed in this study, 76% of them earned less than Rs. 30,000/-, which was a stressor leading to financial crisis. A high correlation (p value of 0.03) indicated that 45% of the couples had been married for less than a year, which made them anxious about handling the circumstance. There was no discernible correlation between anxiety and prior LSCS, religion, family type, or location.

5. Conclusion

Nurses working in the department of Obstetrics must be empowered to provide family centred pre-surgical counselling with an understanding of the psychological factors contributing to anxiety among the care givers. Availability of a professional nurse counsellor to visit the patient and the family before and after the surgery would make a massive impact in reducing the anxiety. Availability of the support groups linking the families can be started as an intervention. An in-depth qualitative study can be done to assess the experience of spouses before the surgical procedures.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors have declared no competing interests with respect to the research, authorship and publication of this article. All authors have read and approved the final version of the manuscript.

Statement of ethical approval

Ethical approval for the study was provided by the Institutional Review Board Committee.

Statement of informed consent

Informed consent was obtained from all participants. Any information taken from the participants was kept confidential.

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