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Original Research Paper

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# ASSOCIATION OF PREGNANCY SPECIFIC ANXIETY AND ADVERSE LABOUR OUTCOMES- A PROSPECTIVE STUDY CONDUCTED IN CENTRAL KARNATAKA

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## ABSTRACT

**Introduction:** Anxiety during pregnancy can manifest in many forms, one of it being Pregnancy specific anxiety (PSA) which is defined as worries, concerns and fears about pregnancy, childbirth, and health of infant and future parenting. This study was done to assess the prevalence of PSA and its correlation with adverse labor outcomes.

**Objective:** To assess the prevalence of PSA and adverse labour outcomes, including the low birth weight (LBW), emergency caesarean section, and preterm and post-dated pregnancy and to study the association between the same in a sample of pregnant women in Davanagere.

**Methodology:** After obtaining IERB approval, a sample of 220 pregnant women were assessed for Pregnancy specific anxiety with appropriate questionnaire and followed up on their labor outcomes.

**Results:** The prevalence of PSA was maximum in the second trimester, and of adverse labor outcomes were similar to overall prevalence in India. Our study revealed that PSA had moderately significant correlation with duration of pregnancy (p=0.013) and suggestive significance with mode of delivery (p = 0.052), while no significance with birth weight of baby (p= 0.792)

**Conclusion:** In this study, an attempt has been made to evaluate the severity of Pregnancy specific anxiety and its relation to adverse labour outcomes and our results recommend that obstetricians need to take anxiety into consideration and a routine screening of pregnancy anxiety needs to be integrated into antenatal care so that specific interventions can be incorporated in the future.

**KEYWORDS :** Pregnancy specific anxiety, preterm birth, low birth weight, emergency LSCS

## INTRODUCTION:

Pregnancy is widely considered as nature's gift to women. The would be mother along with the family goes through a pleasant experience of expecting and welcoming a new member to the family. However a few pregnant women undergo significant amount of stress and at times anxiety and depression due to the anticipated complications associated with pregnancy[1]. Anxiety during pregnancy can manifest in many forms, one of it being Pregnancy specific anxiety (PSA). Pregnancy-specific anxiety is defined as worries, concerns and fears about pregnancy, childbirth, and health of infant and future parenting[2].

There are several evidences to show that pregnancy anxiety has dual effects on the mother and baby, largely by influencing the labor outcomes in various ways. Preterm delivery, prolonged labor, caesarean birth and low birth weight are the adverse labor outcomes most common associations[3, 4, 5, 6] with PSA. There had been various studies conducted across the world aimed at assessing the prevalence of anxiety during pregnancy and the results were diverse, to say the least ranging from 17-55%[7,8]. However, most of these studies were aiming at anxiety in general in contrast to Pregnancy specific anxiety. Furthermore, very few studies have examined the correlation between Pregnancy specific anxiety and adverse labor outcomes.

Taking into account the limited research on this area in India, this study is being done to determine the correlation between magnitude of Pregnancy specific anxiety and adverse labor outcomes. Study is being planned at a tertiary care center in Davanagere district of central Karnataka state, which in turn would help in designing and implementing appropriate strategies intended for improving maternal mental health and thereby decreasing the adverse pregnancy outcomes in future.

## OBJECTIVE:

1. To assess the prevalence of Pregnancy specific anxiety among a sample of pregnant women in and around Davanagere
2. To assess the prevalence of adverse labour outcomes, including the low birth weight (LBW), emergency caesarean section, and preterm and post-dated delivery among the same sample
3. To study the association between PSA and the adverse labour outcomes.

## Material And Methods

### Inclusion Criteria:

1. Willing and consenting pregnant women in the age group of 18-35 years
2. Singleton pregnancy

### Exclusion Criteria:

1. Pregnant women who are not willing to participate in the study
2. Pregnant women coming under ICD 10 O-09, which codes to high risk pregnancy
3. Pregnant women suffering from other chronic medical or surgical disorders
4. Pregnant women suffering from or has had a past history of any psychiatric illness.

**Duration Of Study:** 9 months

**Sample Size:**

$$\text{Sample size} = n = \frac{z_{1*}^2\, p*q}{d^2}$$

Where, $z_1$ – 95% confidence level = 1.96

p = Prevalence = 27.8%

d – Absolute precision = 6%

$$\text{Sample size} = n = \frac{1.96^2*27.8*(100-27.8)}{6^2}$$

Sample size n= 214 Rounded up to 220 cases.

**Assessment Tools:**

1. Semi-structured proforma to elicit socio demographic, medical and obstetric details.
2. Pregnancy Specific Anxiety Inventory to assess Pregnancy specific anxiety

**Methodology:**

Consecutive patients attending Obstetrics and Gynecology OPDs and inpatient antenatal wards, who meet the inclusion criteria and do not get excluded were recruited into the study. They were interviewed during their visit/stay at the hospital. Gestational age was determined according to the date of the last menstrual period (LMP) and by an ultrasound examination performed before 20 weeks. The pregnant women were informed of the study aim and protocol, and once they voluntarily agree to participate, informed written consent will be taken in their own understandable language, which emphasized their right to withdraw from the study at any point without affecting their routine care. A self-designed proforma was used to collect information regarding socio-demographic, medical and obstetric details during in-person interviews. Pregnancy Specific Anxiety Inventory was used to assess study subjects' experience of anxiety during pregnancy. The patients were followed up at the time of delivery and the labor outcomes will be noted. The data so obtained was tabulated and subsequently analyzed using SPSS software version 22.

**RESULTS:**

In the present study, out of the 220 subjects, 63 women experienced MILD anxiety, while 87 and 70 women experienced MODERATE and SEVERE anxiety. Prevalence of Low birth weight babies was 26.4%, while the same for Very low birth babies and High birth weight babies was 6.6% and 6.1% respectively. When the mode of delivery was taken into consideration, 17.5% and 13.2% women had undergone elective and emergency Lower segment Caesarian section (LSCS) respectively, and the rest had normal vaginal delivery. Finally, while 13.2% of our sample of pregnant women had delivered at a pre-term date (< 37 weeks), 6.2% of women delivered after 41 weeks of pregnancy (Postdated pregnancy). On statistical analysis, our study revealed that Pregnancy specific anxiety had moderately significant correlation with duration of pregnancy (p=0.013) and suggestive significance with mode of delivery (p = 0.052), but none with weight of the baby.

**Discussion:**

1) Prevalence of PSA – According to our study, the severity of PSA was graded into mild, moderate and severe anxiety and their prevalence in the sample was 29%, 39% and 32% respectively. Furthermore, throughout the course of pregnancy, high levels of PSA were observed in first and third trimester with low prevalence in second trimester contributing to a U pattern. The current finding is consistent with similar finding of U pattern of anxiety in other studies.[9,10]
2) Prevalence of abortions – From our sample size of 220 pregnant women, 8 had undergone abortions and hence the correlation of PSA with adverse labour outcomes was done for 212 women.
3) Prevalence of adverse labour outcomes – In our study, the major adverse labour outcomes we took into consideration were deviations from the

- Normal birth weight of baby (2.5-3.5 kg)
- Term of pregnancy (37-41 weeks) and
- Normal vaginal delivery, including elective and emergency caesarean section.

While 6.6% of babies born were categorized as Very low birth weight (< 1.5 kg), 26.4% of total babies were classified as Low birth weight (1.5 – 2.5 kg), and 6.1% as High birth weight (> 3.5 kg). The current findings are roughly similar to previous studies in this area of research[11,12].

While 13.2% of ladies had delivered pre term (< 37 weeks), 6.2% delivered after 41 weeks, termed as postdated pregnancy, both of these results being consistent with previous similar studies[13,14]

Again, majority of women had normal vaginal delivery (69.3 %), even though 17.5% of deliveries were through elective caesarian section and 13.2% were via emergency C-section, the latter finding being contradictory to the study done by Singh SK et al, which showed the prevalence of emergency C-section as a mere 7.6%.[15]

4) Correlation between PSA and adverse labour outcomes –

- PSA vs. Birth weight of baby – There study revealed that there was no significant association ( p = 0.792 ) between PSA and birth weight of the baby, a finding which was contrary to previous studies done by Nasreen et al. 2010 and Yang S et al. 2017.[16,17]
- PSA vs. Term of pregnancy – According to our statistical analysis, there was significant association (p = 0.013) between PSA and term of pregnancy Moderate to severe PSA also contributed to both preterm birth and post-dated deliveries, the findings which are consistent with those of previous studies (Glynn et al., 2008; Hall et al., 2009).[18,19]
- PSA vs. Mode of delivery - Our study revealed moderately significant association (p = 0.052) of PSA with elective and emergency caesarean births. The study pointed out that high PSA was one of the major factor for emergency caesarean. These findings are in agreement with previous studies (Fenwick et al., 2009; Laursen et al 2009)[20,21]

5) Components of PSA - PSA has 4 components, namely Anxiety being pregnant, Anxiety of Childbirth, Anxiety of breast feeding and Anxiety of new-born care. The present study revealed high prevalence for the former two components rather than the latter two, a finding which was consistent with the study conducted by G. Madhavanprabhakaran et al.[22]

**Strength Of The Study:**

1. Longitudinal study was done here.
2. Use of self-report scales for assessment of Pregnancy specific anxiety

**Limitations Of The Study:**

1) The present study was restricted to hospital patients only.
2) A limited population was assessed; hence, the findings of the present study need further corroboration from more studies before it can be generalised to entire population.
3) Risk factors for adverse labour outcomes were assessed only at the time of the initial interview, and a majority of intra partum causes were not taken into consideration.

**CONCLUSION:**

In this study, an attempt has been made to evaluate the severity of Pregnancy specific anxiety and its relation to adverse labour outcomes. Anxiety being pregnant and anxiety of newborn care were the identified as significant components of PSA. The high prevalence of pregnancy-specific anxiety could be attributed to low perceived knowledge on childbirth and parenting due to the lack of formal childbirth education in the era of nuclear family norm. Our study advocates that obstetricians need to take anxiety as a major health concern and a routine screening of pregnant women for pregnancy-specific anxiety is necessary in order to provide early preventive measures to reduce anxiety,

including appropriate referrals to Psychiatrists, and subsequently reduce the adverse pregnancy outcomes. The authors recommend a formal childbirth education for pregnant women in all hospitals in Karnataka to enhance childbirth preparation and empower women to cope with the changes and challenges of pregnancy and childbirth.

**Tables:**

**Table 1**

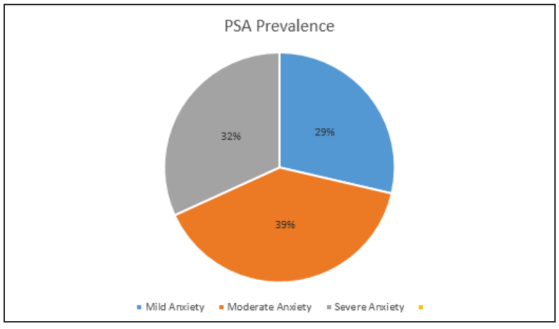


**Table 2**

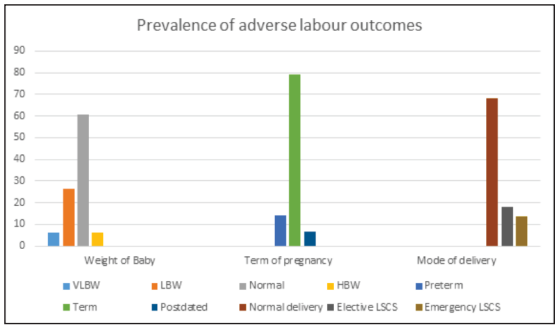


**Table 3**

| Variables | Pregnancy specific anxiety inventory | | | Total (n=212) | P value |
|---|---|---|---|---|---|
| | Mild anxiety (n=61) | Moderate Anxiety (n=84) | Severe Anxiety (n=67) | | |
| • Birth Weight (kg) | | | | | |
| • Very LBW | 4(6.6%) | 5(6%) | 5(7.5%) | 14(6.6%) | 0.792 |
| • LBW | 14 (23%) | 21(24.5%) | 20(29.9%) | 56(26.4%) | |
| • Normal | 38 (62.2%) | 52(61.5%) | 40(59.6%) | 129(60.9%) | |
| • HBW | 5(8.2%) | 6(8%) | 2(3%) | 13(6.1%) | |
| • Term | | | | | |
| • Pre term | 5(8.2%) | 10(11.9%) | 13(19.4%) | 28(13.2%) | 0.013 * |
| • Term | 54 (88.8%) | 68(80.1%) | 49(73.1%) | 171(80.6%) | |
| • Post Dated | 2(3%) | 6(8%) | 5(7.5%) | 13(6.2%) | |
| • Type of Deliveries | | | | | |
| • Normal | 46 (75.4%) | 61(72.6%) | 40(59.7%) | 147(69.3%) | 0.052 + |
| • Elective LSCS | 10 (16.4%) | 15(17.9%) | 12(18%) | 37(17.5%) | |
| • Emergency LSCS | 5(8.2%) | 8(9.5%) | 15(22.3%) | 28(13.2%) | |

Key

- + Suggestive significance (P value: 0.05<P<0.10)
- * Moderately significant ( P value:0.01<P 0.05)
- ** Strongly significant (P value : P0.01)

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