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Research Paper

Paternal Post-Partum Depression and Perinatal Anxiety with Infants Up to 6 Months: Indian Urban Study

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ABSTRACT

Objectives: The study aimed to determine the presence of postpartum depression (PPD) and perinatal anxiety (PA) experienced by fathers 6 months from birth. The objectives of this study focused on measuring the relationship between perinatal anxiety and postpartum depression in fathers, to find the difference in perinatal anxiety between fathers who had a planned or unplanned pregnancy, to find the difference between young-aged fathers and middle-aged fathers with respect to postpartum depression and lastly, to understand the difference in perinatal anxiety in groups of fathers who have previously experienced a miscarriage and those who have never experienced miscarriage. **Methods:** The Edinburgh Postnatal Depression Scale and the Perinatal Anxiety Screening Scale were administered to 85 fathers aged 20–51 years with infants aged 0–6 months from urban Bengaluru and Goa. A quantitative, cross-sectional comparative design was employed. Participants were recruited through purposive sampling. SPSS for Windows was used to carry out Mann-Whitney U and Spearman's rank correlation coefficient after testing for normality and homogeneity of variances. Statistical significance was set at $p < .05$ for all analyses. **Results:** A weak negative, non-significant correlation was found between PPD and PA ($r = –.085$, $p = .437$). Fathers aged 36–51 years reported significantly higher depression scores ($U = 541.50$, $z = -3.182$, $p = .001$) than fathers aged 20-35 years. Fathers of unplanned pregnancies had significantly higher anxiety ($U = 211.00$, $z = -5.973$, $p = .000$). No significant differences in PA were observed between fathers with and without a history of miscarriage ($U = 714.00$, $z = -0.176$, $p = .860$). **Conclusion:** Paternal PPD and PA were not significantly associated. Age and planning significantly influenced symptoms of PPD and PA respectively, while miscarriage history showed no effect on PA. Thus, highlighting the importance of routine screening and targeted interventions in paternal mental healthcare.

Keywords: *Depression, Postpartum Depression, Anxiety, Prevalence, Fatherhood, Mental Health, Perinatal Care, Paternal, Postnatal*

The aim of this research was to study paternal postpartum depression (PPD) and perinatal anxiety (PA) in fathers with infants up to 6 months of age in an Indian urban setting. The emphasis on 6 months postpartum was based on literature indicating that prenatal and postpartum depression was evident in about 10% of men and was relatively

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higher in the 3- to 6-month postpartum period in the year 2010 (Paulson & Bazemore, 2010, p. 1961). In the year 2023, paternal postnatal depression still showed higher prevalence at 3-6 months postpartum (Dhanpal & Shil, 2023, p. 453). Armin Brott, author of 'The Expectant Father', emphasized that the psychological journey of pregnancy and childbirth is as experiential for fathers as it is for mothers (Brott 2003). In Karnataka, it was reported that about 10% of fathers experienced postnatal depression within the first year as men may experience post-partum depression and perinatal anxiety due to worries about parenting abilities, financial strain, relationship changes, low social support, lack of sleep, unmet expectations, education level, and traumatic birth experiences (Dhanpal & Shil, 2023, p. 453). Similarly, it was found that financial stress, limited education, and relationship difficulties increased risk of paternal post-partum depression (Dhanpal & Shil, 2023, p. 453). Unplanned pregnancy, low parenting confidence, and substance use were significant contributors to the perinatal anxiety and post-partum depression factors (Dhanpal & Shil, 2023, p. 453). Globally, paternal post-partum depression prevalence is estimated at 8.4%, with over 10% of fathers experiencing perinatal anxiety (Chhabra et al., 2020, p. 593). Studies noted that paternal depression peaks between 3–6 months postpartum, affecting bonding and partner relationships. Paternal involvement also influences infant outcomes, reducing risks of preterm birth and low birth weight (Cameron et al.,2016, p. 189). Yet, emotional well-being of fathers remains underexplored, reporting 12% prenatal anxiety and 2.4% postnatal anxiety in fathers (Dhanpal & Shil, 2023, p. 453).

The need for routine mental health screening and psychosocial interventions to manage the symptoms of post-partum depression in mothers has to be emphasized (Mahmoud et al.,2024). While maternal mental health screening is becoming more common in some parts of India, there is almost no routine evaluation of paternal psychological well-being during or after pregnancy (Mahmoud et al.,2024). This lack of recognition is particularly concerning because paternal mental health has been shown to impact not only the father's functioning but also the development of the infant and the well-being of the entire family unit (Mahmoud et al.,2024). Bidirectional longitudinal associations between the quality of coparenting relationships and depression symptoms among fathers of infants and toddlers showed that fathers with higher post-partum depression had lower co-parenting abilities (Dutta & Sharma, 2025, p. 2853). The significance of paternal perinatal depression during the perinatal period highlights its impact on newborn infants, therefore recognizing and addressing fathers' mental health needs are crucial for overall family well-being (Wells et al., 2023, p. 440). Furthermore, the manifestation of depression in men may differ significantly from that in women. Rather than expressing sadness, men may exhibit irritability, anger, fatigue, or disengagement from family and work. Such differences in symptom expression contribute to under-recognition and under-diagnosis of paternal depression (Alex, 2024, p. 339).

The gap in the literature on paternal postpartum depression and perinatal anxiety is both geographical and conceptual. While some studies document paternal anxiety and depressive symptoms, few explore the deeper emotional, social, and psychological dynamics of the transition to fatherhood, especially in the Indian context where stigma and traditional gender norms add complexity. Global research often focuses on general mood symptoms or work stress, overlooking situational factors such as previous pregnancy loss or age-related stressors, the factors this study aims to address. This study examines the relationship between perinatal anxiety and postpartum depression in fathers within six months of birth, while analysing the influence of pregnancy planning, father's age, and miscarriage history, contributing to Indian data. The Edinburgh Postnatal Depression Scale (EPDS) was used to measure paternal

depression. It was stated that the EPDS may not fully capture paternal perinatal depression, as men often show symptoms like impulsivity or substance use that differ from women, and it also overlooks other psychosocial distress affecting families (Baldoni & Giannotti, 2020). But contrary to that, to support our study, a meta-analysis across multiple Indian regions was performed which concluded that EPDS is psychometrically valid in diverse settings (Mancini et al., 2025).

This study addresses gaps in understanding paternal postpartum depression and perinatal anxiety in Indian fathers of infants up to six months. The rationale behind this study is that fathers do not undergo childbirth biologically, but they experience major emotional and psychological transitions. Role shifts, financial responsibilities, and changes in marital adjustment can lead to stress that, if unaddressed, affects bonding with the child, parenting, and partner dynamics. Therefore, studying the gap can help to develop targeted interventions. The objective of this study is to examine the relationship between PA and PPD within six months postpartum and explore differences based on PA due to pregnancy planning, PPD due to age (younger vs. middle-aged fathers), and PA due to history of miscarriage. It focuses on fathers from Karnataka and Goa. Bengaluru, as a metropolitan city in Karnataka with individuals having a busy lifestyle, presents a heterogeneous population with multiple languages, cultures, and educational backgrounds, whereas Goa, a smaller state known for its unique cultural blend with individuals having a more routine lifestyle, allowed access to a representative sample of new fathers. This geographical diversity was intended to enhance the generalizability of the findings across different urban Indian contexts thus, contributing to the global literature on paternal perinatal mental health. The sample size, although small, was determined based on feasibility, resource availability, and prior research benchmarks investigating paternal perinatal and postnatal mental health. The study hypothesizes that there is no correlation between perinatal anxiety and postpartum depression. There is no significant relationship between unplanned pregnancies and a history of miscarriage with PA respectively. Younger fathers will not show a difference in PPD compared to middle-aged fathers. This research highlights the emotional landscape of fatherhood and the need for inclusive perinatal mental healthcare addressing both parents' well-being.

MATERIALS AND METHODS

Objectives

The objectives of this study were:

1. To measure the relationship between perinatal anxiety and postpartum depression in fathers with infants up to 6 months.
2. To find the difference between young-aged fathers and middle-aged fathers with respect to postpartum depression.
3. To find the difference in perinatal anxiety between groups who had a planned or unplanned pregnancy
4. To understand the difference in perinatal anxiety in groups of fathers who have previously experienced miscarriage and those who have never experienced miscarriage.
5. To contribute to the limited literature on paternal perinatal mental health within the Indian urban context.

Hypothesis

1. There will be no significant relationship between perinatal anxiety and postpartum depression in fathers.

2. There will be no significant difference in postpartum depression between fathers with respect to their age groups.
3. There will be no significant difference in perinatal anxiety due to planned or unplanned pregnancy in fathers.
4. There will be no significant difference in perinatal anxiety between fathers who have previously experienced or not experienced a miscarriage.

Sample Size and Sampling Technique

A total of 85 participants were included in the study through purposive sampling. Purposive sampling was selected to ensure participants met specific inclusion and exclusion criteria and were representative of the target population of biological fathers actively involved in infant caregiving. These criteria ensured a homogeneous sample regarding caregiving role and mental health baseline.

Tools Used

Two standardized, self-administered questionnaires were utilized for data collection:

- **Edinburgh Postnatal Depression Scale (EPDS):** Edinburgh Postnatal Depression Scale (EPDS), (Fellmeth et al., 2021), was utilized in this study. It is a 10- item screening instrument used primarily to identify postpartum depressive symptoms in mothers and fathers. Each question consists of 4 items about how you are feeling. The participant must choose an appropriate option based on how they have felt in the last 7 days. Each item is rated from 0–3, giving a total maximum score of 30. A higher score indicates more severe depressive symptoms. The cut-off score was 10 for fathers. A score equal to or greater than these values was considered to indicate moderate to severe depression. The Cronbach's alpha in this study was .88 for fathers. The EPDS has demonstrated robust psychometric properties and has been validated for use with fathers in multiple studies.
- **Perinatal Anxiety Screening Scale (PASS):** The Perinatal Anxiety Screening Scale (PASS), (Cox et al., 1987, p. 782), was utilized in this study. It is a 31-item self-rated questionnaire investigating anxiety symptoms during gestation and after delivery for mothers and fathers. Each item is rated on a Likert 0–3 scale and the participant must choose the option they relate to in the past month. The total score is the addition of scores on each item, with higher scores representing more anxiety. Scores may range from 0–93. Cut-off for clinical anxiety is ≥26. A further study stratified the investigated population into minimal anxiety (scoring 0–20), mild–moderate anxiety (21–41), and severe anxiety symptoms (42–93) . The scale showed adequate test–retest reliability (rho = 0.74), a sensitivity of 70% and specificity of 30% at the 26 cutoff. The PASS showed adequate convergent validity. The PASS has demonstrated good internal consistency and validity in perinatal populations.

Both tools were administered in English, suitable for the majority of participants in the urban settings of Bengaluru and Goa. Cultural considerations were acknowledged in data interpretation. The tools used for the study were widely available online and did not specify the requirement to take prior permission to use them for the study.

Recruitment Method

Participants were recruited using purposive sampling through communities, hospitals, parental support groups and word-of-mouth referrals. Inclusion criteria were consistently applied and included male gender, belonging to the urban settings in Bengaluru and Goa,

ranging in age from 20-51 years old and whose wives were alive post-delivery. Voluntary participation was emphasized throughout. This recruitment strategy was employed to reach fathers from diverse backgrounds and optimize participation rates. Parenting forums and hospital settings provided direct access to new fathers, while word-of-mouth referrals helped reach fathers less engaged in formal support settings. Clear communication about study aims and information on accessible mental health assistance if required was provided. This was maintained to foster trust and honest responses. Exclusion criteria for the study consisted of limitations that compromised the participant's ability to follow the research protocol, presence of mental instability or illness and fathers whose infant was born via surrogacy or was adopted.

Data Collection Procedure

Data was collected in person from July 2022 to February 2023. Participants were provided with a demographic sheet, informed consent form, and the EPDS and PASS questionnaires. Participants were briefed on the study's aims, voluntary nature, and confidentiality measures. After completion, participants were debriefed to answer any questions and provided with information on mental health resources as needed, ensuring ethical follow-up and support. Confidentiality was maintained through anonymized data handling and secure storage.

Statistical Analysis

Data was analysed using IBM SPSS Statistics for Windows. Descriptive statistics summarized demographic characteristics and questionnaire scores. The data collected was assessed for normality using Shapiro-Wilk test and Levene's test for homogeneity of variances. If these tests were not significant, then data would be subject to parametric tests i.e. independent samples t-test and Pearson Correlation Coefficient. If the tests were significant, and the assumptions were violated, a non-parametric test alternative such as the Mann-Whitney U and Spearman's rank correlation coefficient would be considered. In addition, descriptive statistics would be carried out.

The Shapiro-Wilk test assessed normality, which indicated non-normal distributions for key variables. Therefore, non-parametric tests were applied. Spearman's rank-order correlation coefficient was used to examine the relationship between postpartum depression (EPDS scores) and perinatal anxiety (PASS scores).
Statistical significance was set at $p < .05$ for all analyses.

Study Setting

The study was conducted in urban settings of Bengaluru (Karnataka) and Panjim (Goa), India between July 2022 and February 2023. These locations were selected based on their urban demographic diversity and the presence of varied socioeconomic and cultural groups. Participants were fathers whose wives had delivered and were within six months postpartum. They were recruited from communities, hospitals, and parental support groups within these urban areas, ensuring a cohort of appropriately representative new fathers.

Study Design

This research employed a quantitative, cross-sectional comparative design to investigate the presence and relationship of postpartum depression and perinatal anxiety in fathers of infants up to six months of age. The cross-sectional comparative design allowed for the assessment of mental health variables at a single point in time while comparing groups based on relevant factors such as paternal age, pregnancy planning, and miscarriage history. This approach

encouraged understanding the prevalence and differences between subgroups within the study population.

Ethical Approval

The study protocol was reviewed and approved by the Research Ethics Committee consisting of expert panel from internal and external faculty of Montfort College, Bengaluru, ensuring compliance with ethical standards for research involving human participants. Ethical considerations included obtaining informed consent from all participants, ensuring confidentiality, and minimizing any potential harm. Participants were informed about the voluntary nature of their participation and their right to withdraw at any time without penalty. There were no anticipated harms in this study as it aimed to find out whether fathers show symptoms of perinatal depression and anxiety by choosing options regarding their affect in the last month of pregnancy up-to 7 days prior to answering the questionnaire. Since the study involved only self-administered questionnaires and no invasive procedures, the risk to participants was minimal. Data confidentiality was maintained through secure storage and anonymization. Lastly, all sources have been cited with due acknowledgements.

Independent Variables

a) Fathers: Married men with offspring between 0-6 months.
b) Planned or Unplanned Pregnancy: Fathers' desirability to conceive.
c) Father's age: Young adults ranging from 20-35 years of age and middle-aged adults ranging from 36-51 years of age.
d) Miscarriage: Men whose wives have experienced a spontaneous loss of a pregnancy.

Dependent Variables

a) Postpartum Depression: Episode of major depressive disorder occurring soon after the birth of a child.
b) Perinatal anxiety: Changes to thoughts, actions, feelings and bodily sensations during pregnancy and after the birth of the child.

RESULTS AND DISCUSSION

Hypothesis 1: There will be no significant relationship between perinatal anxiety and postpartum depression in fathers.

Table 1.1: Table showing the results of descriptive statistics carried out for perinatal anxiety and postpartum depression scores

Groups	N	Mean	Std. Deviation	Std. Error Mean	Kurtosis	Skewness
Perinatal Anxiety	85	34.95	17.382	1.885	-.365	.838
Post-Partum Depression	85	14.28	6.248	.678	.573	1.063

Descriptive statistics for a total of 85 fathers who participated in the study. The total number of fathers aged between 20-35 (N =41) and 36-51 (N=44). All the participants were biological fathers to the infants (100%). The participants were taken from urban settings of Goa (55 %) and Bengaluru, Karnataka (45%). The Shapiro-Wilk test revealed that scores for perinatal anxiety ($W = .893$, $p < .001$) and postpartum depression ($W = 0.897$, $p < .001$) were not normally distributed.

Table 1.2: Table showing the results of correlation carried out to check for association between perinatal anxiety and postpartum depression scores

Correlations			**Perinatal Anxiety**	**Post-Partum Depression**
Spearman's Rho	Perinatal Anxiety	Correlation Coefficient	1.000	-.085
		Sig. (2 - tailed)	-	.437
		N	85	85
	Post-Partum Depression	Correlation Coefficient	-.085	1.000
		Sig. (2 - tailed)	.437	
		N	85	85

To examine the relationship between paternal anxiety and postpartum depression, Spearman's correlation analysis was conducted. Results showed a weak, non-significant negative correlation ($r_s = -.085$, $n = 85$, $p = .437$), indicating no significant relationship between the two variables. Therefore, the null hypothesis stating no significant relationship between perinatal anxiety and postpartum depression in fathers with infants up to 6 months was accepted.

These findings show that paternal perinatal anxiety is not significantly associated with postpartum depression during the first 6 months after childbirth and vice versa. Conducted in Bengaluru and Goa, this study contributes to understanding fathers' mental health in these settings, especially adding much-needed evidence from Goa, to the Indian context, where research on this topic has been limited. The results highlight that fathers' psychological trajectories may differ from maternal pathways.

While both conditions may manifest independently or co-occur, they did not demonstrate a correlational relationship in the present sample. This stands in contrast to maternal mental health research, where comorbidity between anxiety and depression is frequently observed (Somerville et al., 2015). Focusing on fathers in Bengaluru and Goa, this study examined a diverse yet generalizable sample to better understand paternal emotional needs. These concerns point to the importance of using validated and gender-sensitive assessment tools, such as the Edinburgh Postnatal Depression Scale and the Gotland Male Depression Scale (Wang et al., 2024). The weak association observed between paternal post-partum depression and perinatal anxiety in the present study limits the possibility of generalizing findings to the wider population, particularly given the modest sample size. Nevertheless, the results suggest that post-partum depression and perinatal anxiety can exist independently and may not act as causal factors for one another. This is consistent with previous literature, which has emphasized that these constructs do not necessarily co-occur or share a direct causal pathway (Carlberg, 2018, p. 720). Paternal anxiety and depression was investigated in the first month after childbirth, reporting that these symptoms were strongly associated with infant hospitalization and behavioural difficulties. The study further indicated that depression was significantly linked to employment status and vulnerable personality traits, while higher family income, planned pregnancy, desired child gender, and strong social support functioned as protective factors (Philpott et al., 2019, p. 54). Similarly, using the Edinburgh Postnatal Depression Scale, found that older fathers were more vulnerable to depressive symptoms due to reduced sleep, health-related issues, and financial concerns. These findings highlight how

both demographic and contextual factors shape paternal postnatal mental health outcomes (Wang et al., 2024).

Hypothesis 2: There will be no significant difference in postpartum depression experienced by fathers with respect to their age groups.

Table 2.1: Table showing the results of Mann-Whitney U carried out for ages groups of fathers with respect to their post-partum depression scores

	Post-partum depression
Mann-Whitney U	541.500
Wilcoxon W	1402.50
Z	-3.182
Asymp. Sig. (2-tailed)	.001*
*p< .05	

Descriptive analysis showed that the mean postpartum depression score was 14.28 (SD = 6.25) for 85 participants, where two age groups were coded (1 = 20–35 years, 2 = 36–51 years). Postpartum depression scores were positively skewed (1.063),) and kurtosis suggested that postpartum depression scores were clustered around the mean. Normality tests via Shapiro-Wilk indicated non-normal distribution for postpartum depression ($W = .897$, $p < .001$) and age group ($W = .636$, $p < .001$).

Fathers who were (36-51 years) had a mean rank of 51.19 and reported higher levels of postpartum depression compared to fathers in the younger age group (20–35 years) whose mean rank was 34.21.

Additionally, to examine the post-partum depression scores between fathers' age-groups, the Mann-Whitney U test was conducted. This revealed a significant difference in the scores of post-partum depression of the two age groups, 20-35 years ($n = 41$) and 36 – 51 years ($n = 44$), $U = 541.50$, $z = -3.182$, $p = .001$. Thus, the null hypothesis that there is no significant difference in postpartum depression between fathers of different age groups was rejected.

The findings indicate that fathers from Bengaluru and Goa within the age group of 36–51 experience higher levels of post-partum depression compared to those in the 20–35 age group. This study contributes to understanding the underlying factors associated with this trend and underscores the importance of developing age-appropriate tools and interventions to better support fathers in this demographic. This pattern may be linked to the broader responsibilities and stressors associated with midlife crisis, including increased medical concerns, physical strain, financial pressures nearing retirement, and heightened societal expectations of fatherhood (Dhanpal & Shil, 2023, p. 782). Marital adjustments also appear relevant, as reduced intimacy and relationship struggles following childbirth, compounded by maternal health challenges may further ignite paternal vulnerability (Cajiao-Nieto & Alvarado-Garcia, 2021, p. 517). These findings emphasize the necessity of considering age-related and relational factors in understanding paternal mental health.

The impact of paternal postpartum depression and anxiety extends beyond the individual father, influencing the well-being of both partners and the newborn (Cajiao-Nieto & Alvarado-Garcia, 2021, p. 517). It was noted that fathers experiencing these difficulties may struggle to

communicate their fears and stress to their partners, potentially straining the relationship and contributing to maternal depressive symptoms (Cajiao-Nieto & Alvarado-Garcia, 2021, p. 517). Emotional and financial unpreparedness were central stressors, particularly among fathers from low socioeconomic backgrounds (Thiel et al., 2020). A systematic review also reported that fathers frequently felt socially excluded from peers with living children, compounding their sense of isolation. Taken together, these findings underscore the complex interplay of psychosocial, cultural, and demographic factors shaping paternal perinatal anxiety and depression, emphasizing the urgent need for gender-sensitive research and interventions in this domain (Bute & Hernandez, 2019, p. 379).

Hypothesis 3: There will be no significant difference in Perinatal Anxiety Based on Planned or Unplanned Pregnancy.

Table 3.1: Table showing the results of Mann-Whitney U carried out for fathers who had a planned or unplanned pregnancy

	Perinatal Anxiety Scores
Mann-Whitney U	211.000
Wilcoxon W	1436.000
Z	-5.973
Asymp. Sig. (2-tailed)	.000

The mean perinatal anxiety score for 85 fathers was 34.95 (SD = 17.38), with planned and unplanned pregnancies categorized accordingly. Skewness indicated slight positive skew for perinatal anxiety (0.315) with kurtosis showing spread toward extremes. The Shapiro-Wilk test showed that both perinatal anxiety ($W = .893$, $p < .001$) and pregnancy planning ($W = .628$, $p < .001$) were not normally distributed.

Fathers with unplanned pregnancies ($n = 36$) had significantly higher anxiety mean ranks (61.64) compared to the planned group ($n= 49$) having a mean rank (29.31). To examine the relation between type of pregnancy with respect to perinatal anxiety, a Mann-Whitney U test was conducted. Results showed a significant difference in the scores of perinatal anxiety between the two groups of planned and unplanned pregnancy, $U = 211.00$, $z = -5.973$, $p = .000$. Therefore, the null hypothesis that there is no significant difference between the scores of perinatal anxiety and planned or unplanned pregnancy is rejected.

The findings indicate that fathers from this demographic reported higher levels of perinatal anxiety in cases of unplanned pregnancy. Fathers experiencing unplanned pregnancies reported significantly higher perinatal anxiety compared to those with planned pregnancies, suggesting that unplanned parenthood may heighten stress, feelings of powerlessness, and relational strain (Dhanpal & Shil, 2023, p. 453). Such emotional responses should be carefully considered in the development of paternal mental health interventions (Chhabra & McDermott, 2022). This highlights the role of pregnancy planning as a potential factor influencing paternal mental health and points to the need for further exploration of its implications in this context (Smith et al., 2023, p. 22). Research has also emphasized the heightened risks associated with unplanned pregnancies, which stated that unplanned pregnancy increased the risk of paternal perinatal anxiety fourfold and depression threefold (Mazza et al., 2022). A mixed-methods study examined the risk factors associated with paternal perinatal mental distress among Australian men. Key themes identified were

unplanned pregnancy maternal depression, marital distress, masculine gender role stress, work–family conflict, and sleep disturbance as contributing factors (Chhabra & McDermott, 2022). Moreover, a review of studied showed that the odds of reporting mental health difficulties were >2-fold higher in men reporting unintended births compared with those reporting intended births (Smith et al., 2023, p. 22).

Hypothesis 4: There will be no significant difference in Perinatal Anxiety Based on Previous Experience of Miscarriage.

Table 4.1: Table showing the results of Mann-Whitney U carried out for groups of fathers with respect to their previous experience with miscarriage and those who have not experienced miscarriage

	Perinatal Anxiety
Mann-Whitney U	714.000
Wilcoxon W	2605.000
Z	-.176
Asymp. Sig. (2-tailed)	.860

Descriptive statistics showed the mean perinatal anxiety score was 34.95 (SD = 17.38), showing positive skewness (.315) and kurtosis (.365) indicating spread toward extremes.

Shapiro-Wilk tests confirmed non-normality for perinatal anxiety ($W = .893$, $p < .001$) and miscarriage experience ($W = .564$, $p < .001$). The Mann-Whitney U test compared anxiety scores between fathers with ($n = 24$) and without ($n = 61$) previous miscarriage experience. The results indicated $U = 714.00$, $z = -0.176$, $p = 0.860$. The mean ranks were 43.75 and 42.70, respectively, with no significant difference observed. Therefore, the null hypothesis that there is no significant difference in perinatal anxiety based on miscarriage experience was accepted. While miscarriage is a significant emotional event, these findings suggest it may not influence paternal perinatal anxiety. This underscores a need for further research on paternal emotional adjustment following miscarriage.

This study sought to address the gap in understanding fathers' emotional experiences during the perinatal and postnatal period, with particular emphasis on paternal responses to miscarriage. Research in this area often prioritizes maternal well-being, as mothers undergo the physiological changes associated with miscarriage, while the father's psychological response is frequently overlooked (Wells et al., 2024). However, evidence suggests that while miscarriage is a distressing event, its impact on subsequent paternal anxiety may be moderated by factors such as repressing emotions, poor social support or time elapsed since the loss (Williams et al., 2020, p. 133). Cultural expectations discourage emotional expression among men which may further influence these outcomes. In the Indian context, paternal perinatal health remains an underexplored domain, despite its potential to affect family functioning and child development (Williams et al., 2020, p. 133)

Further, fathers' responses to miscarriage represent another underexplored area of paternal mental health. Qualitative studies found that fathers often prioritized supporting their partners over acknowledging their own grief (Fisher et al., 2012, p. 97). This aligns with findings which suggested that gendered expectations discourage men from openly expressing distress after miscarriage (Obst et al., 2020, p. 1).

CONCLUSION

This study adds to the understanding of paternal post-partum depression and perinatal anxiety in the first six months of fatherhood, a topic that requires a generational change in order to find a balance between both the genders as equally contributing to parenthood within their physiological and emotional capacity**.** Addressing paternal mental health is essential, as fathers' psychological well-being has a holistic effect on family functioning, child development, and partner support. Early identification and intervention can help to reduce stigma and encourage fathers to seek help and recognize their emotional needs, thereby fostering healthier family outcomes. Fatherhood undergoes emotional transitions that can involve both positive and challenging experiences. Therefore, study highlights the importance of developing evidence-based tools and targeted interventions to support paternal mental health, enabling fathers to assume their role with resilience while fostering healthy emotional expression and stronger bonds with their child and partner. Future research should include larger, more diverse samples from varied geographic and cultural backgrounds, and consider variables such as prior mental health history, attachment styles, consider mother & child's location post birth given the Indian culture and social support systems.

Limitations

The study's limitations include a reasonable sample size (N=85) drawn from two urban regions. Although the sample size of 85 fathers may seem small, it was still adequate to obtain results that can be generalized to the study objectives. Given the stigma that still surrounds paternal mental health, recruiting participants for such research is challenging, with many fathers hesitant to come forward. In this light, being able to engage 85 fathers within the postpartum period itself was an achievement. More importantly, this process not only provided useful findings but also helped in spreading awareness and sensitizing people to how important paternal mental health is. Purposive sampling and absence of control for individual differences such as emotional availability and socioeconomic status may have influenced outcomes. Future research should include larger, more diverse samples from varied geographic and cultural backgrounds, and consider variables such as prior mental health history, attachment styles, mother and child's location post birth given the Indian culture and social support systems.

REFERENCES

Alex, S. (2024, July). Revealing the hidden impact: Exploring the influence of paternal perinatal depression on father-infant bonding and strategies for enhanced support. *Journal of Neonatal Nursing*, 30(4), 339–341. doi:10.1016/j.jnn.2023.11.002

Attia Hussein Mahmoud, H., Lakkimsetti, M., Barroso Alverde, M. J., Shukla, P. S., Nazeer, A. T., Shah, S., Chougule, Y., Nimawat, A., & Pradhan, S. (2024, August). *Impact of paternal postpartum depression on maternal and infant health: A narrative review of the literature. Cureus, 16*(8), e66478. https://doi.org/10.7759/cureus.66478

Baldoni, F., & Giannotti, M. (2020, September). Perinatal distress in fathers: Toward a gender-based screening of paternal perinatal depressive and affective disorders. *Frontiers in Psychology*, 11, 1892. doi:10.3389/fpsyg.2020.01892

Brott, A. A. (2003). *The expectant father: Facts, tips, and advice for dads-to-be.* New York, NY: Abbeville Press.

Bute, J. J., Brann, M., & Hernandez, R. (2019). Exploring societal-level privacy rules for talking about miscarriage. *Journal of Social and Personal Relationships*, 36(2), 379–399. https://doi.org/10.1177/0265407517731828

Cajiao-Nieto, J., & Alvarado-Garcia, A.-T.-M. (2021, March). Paternal symptoms of anxiety and depression in the first month after childbirth: A comparison between fathers of full-term and preterm infants. *Journal of Affective Disorders*, 282, 517–526. doi:10.1016/j.jad.2020.12.175

Cameron, E. E., Sedov, I. D., & Tomfohr-Madsen, L. M. (2016, July). Prevalence of paternal depression in pregnancy and the postpartum: An updated meta-analysis. *Journal of affective disorders*, *206*, 189–203. https://doi.org/10.1016/j.jad.2016.07.044.

Chhabra, J., Li, W., & McDermott, B. (2022, February). Predictive Factors for Depression and Anxiety in Men During the Perinatal Period: A Mixed Methods Study. *American journal of men's health*, *16*(1), 15579883221079489. https://doi.org/10.1177/15579883221079489

Chhabra, J., McDermott, B., & Li, W. (2020, February). Risk factors for paternal perinatal depression and anxiety: A systematic review and meta-analysis. *Psychology of Men & Masculinities*, 21(4), 593–611. DOI:10.1037/men0000259

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987, June). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*, 150, 782–786. DOI: 10.1192/bjp.150.6.782

Dhanpal, H. N., & Shil, R. (2023, December). Prevalence of postnatal depression in fathers: A systematic review and meta-analysis. *Journal of Health & Allied Sciences NU*, 14(4), 453–459. doi:10.1055/s-0043-1777701

Dutta, I., & Sharma, D. (2025, July). Mothers at risk of postpartum depression and its determinants: A perspective from urban Jharkhand, India. *Journal of Family Medicine and Primary Care*, 14(7), 2853–2860. doi: 10.4103/jfmpc.jfmpc_303_25

Fellmeth, G., Harrison, S., Opondo, C., et al. (2021, April). Validated screening tools to identify common mental disorders in perinatal and postpartum women in India: A systematic review and meta-analysis. *BMC Psychiatry*, 21, 200. doi: 10.1186/s12888-021-03190-6.

Fisher, J., Tran, T. D., Nguyen, T. T., & Tran, T. (2012. September). Common perinatal mental disorders and alcohol dependence in men in northern Vietnam. *Journal of Affective Disorders*, 140, 97–101. DOI: 10.1016/j.jad.2012.03.029

Magdalena Carlberg, M. E. (2018, July). Paternal perinatal depression assessed by the Edinburgh Postnatal Depression Scale and the Gotland Male Depression Scale: Prevalence and possible risk factors. *American Journal of Men's Health*, 12(5), 720–729. DOI: 10.1177/1557988317749071

Mancini, V., Ambrosio Lomeli, Y., Nevill, T. P., Marsh, T. B., Kneebone, E., & Kothari, A. (2025, July). Screening measures of perinatal mental health and well-being in fathers: A scoping review. *International Journal of Environmental Research and Public Health*, 22(7), 1126. doi:10.3390/ijerph22071126

Mazza, M., Kotzalidis, G. D., Avallone, C., Balocchi, M., Sessa, I., De Luca, I., Hirsch, D., Simonetti, A., Janiri, D., Loi, E., Marano, G., Albano, G., Fasulo, V., Borghi, S., Del Castillo, A. G., Serio, A. M., Monti, L., Chieffo, D., Angeletti, G., Janiri, L., … Sani, G. (2022, December). Depressive Symptoms in Expecting Fathers: Is Paternal Perinatal Depression a Valid Concept? A Systematic Review of Evidence. *Journal of personalized medicine*, *12*(10), 1598. https://doi.org/10.3390/jpm12101598

Obst, K. L., Due, C., Oxlad, M., & Middleton, P. (2020, January). Men's grief following pregnancy loss and neonatal loss: A systematic review and emerging theoretical model. *BMC Pregnancy and Childbirth*, 20(11), 1–17. DOI: 10.1186/s12884-019-2677-9

Paulson, J. F., & Bazemore, S. D. (2010, May). Prenatal and postpartum depression in fathers and its association with maternal depression: A meta-analysis. *JAMA*, 303(19), 1961–1969. doi:10.1001/jama.2010.605

Philpott, L. F., Savage, E., FitzGerald, S., & Leahy-Warren, P. (2019, September). Anxiety in fathers in the perinatal period: A systematic review. *Midwifery*, 76, 54–101. DOI: 10.1016/j.midw.2019.05.013

Smith, I., O'Dea, G., Demmer, D. H., Youssef, G., Craigie, G., Francis, L. M., Coles, L., D'Souza, L., Cain, K., Knight, T., Olsson, C. A., & Macdonald, J. A. (2023, October). Associations between unintended fatherhood and paternal mental health problems: A systematic review and meta-analysis. *Journal of Affective Disorders*, 339, 22–32. DOI: 10.1016/j.jad.2023.06.065

Somerville, S., Dedman, K., Hagan, R., Oxnam, E., Wettinger, M., Byrne, S., Calcagni, S., Doherty, D., & Page, A. (2015, March). PASS administration and scoring guidelines: Final.

Thiel, F., Pittelkow, M.-M., Wittchen, H.-U., & Niegel, S.-G. (2020, October). The relationship between paternal and maternal depression during the perinatal period: A systematic review and meta-analysis. *Frontiers in Psychiatry*, 11, Article 563287. DOI: 10.3389/fpsyt.2020.563287

Wang, Y., Wang, Y., Huang, W., et al. (2024, December). Association of maternal postpartum depression, anxiety, and stress symptoms: A network analysis. *BMC Psychiatry*, 24, 940. doi:10.1186/s12888-024-06412-9

Wells, M. B., Jeon, L., & Aronson, O. (2023, March). Bidirectional associations between paternal postpartum depression symptoms and coparenting: A cross-lagged panel model of fathers of infants and toddlers. *Journal of Affective Disorders*, 324, 440–448. DOI: 10.1016/j.jad.2022.12.128

Williams, H. M., Topping, A., Coomarasamy, A., & Jones, L. L. (2020, September). Men and miscarriage: A systematic review and thematic synthesis. *Qualitative Health Research*, 30(1), 133–145. doi:10.1177/1049732319870270

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Conflict of Interest

The author(s) declared no conflict of interest.

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