Section: Miscellaneous

Original Research Article

A CROSS-SECTIONAL STUDY OF QUALITY OF LIFE, PSYCHIATRIC MORBIDITY AND PERCEIVED SOCIAL SUPPORT AMONG POSTPARTUM MOTHERS ATTENDING A TERTIARY CARE HOSPITAL IN CENTRAL GUJARAT

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ABSTRACT

The postpartum period is characterized by substantial physical, psychological, and social adjustment, yet quality of life, psychiatric symptoms, and perceived social support are often evaluated separately. This cross-sectional study assessed these domains among postpartum mothers attending a tertiary-care pediatric outpatient department in Central Gujarat. Mothers up to 14 weeks after delivery who attended routine infant immunization visits were recruited by convenience sampling between February and November 2024. Quality of life was assessed using the WHOQOL-BREF, depressive symptoms with the Edinburgh Postnatal Depression Scale (EPDS), anxiety with the Generalized Anxiety Disorder-7 (GAD-7), and perceived social support with the Multidimensional Scale of Perceived Social Support (MSPSS). Among 315 participants, the overall WHOQOL-BREF score was 76.04 ± 13.09; the psychological domain had the lowest mean score (63.02 ± 13.49). Fifty mothers (15.9%) had EPDS scores ≥10, while 37 (11.8%) had at least mild anxiety. Depressive and anxiety symptoms were associated with significantly lower quality-of-life scores across all domains ($p<0.001$). EPDS and GAD-7 scores correlated negatively with WHOQOL-BREF domains, whereas MSPSS correlated positively (all $p<0.001$). In multivariable models, perceived social support was a positive predictor of all four domains, while depressive and anxiety symptoms showed negative domain-specific associations. Postpartum quality of life was closely associated with mental health symptoms and perceived social support in this hospital-based sample.

Keywords: postpartum; quality of life; postpartum depression; anxiety; perceived social support.

INTRODUCTION

The postpartum period is a critical phase of maternal recovery and adaptation in which physical recovery occurs alongside changes in emotional functioning, caregiving responsibilities, sleep, relationships, and social roles. Contemporary postnatal-care guidance emphasizes that a positive postnatal experience requires attention to maternal physical and emotional wellbeing, not only obstetric recovery.[1] Perinatal mental health is therefore increasingly recognized as an integral component of maternal and child health services.

Postpartum depression is common worldwide, with a large meta-analysis reporting a global prevalence of approximately 17.2%, while an Indian systematic review and meta-analysis reported a pooled prevalence of 22%.[2,3] Anxiety symptoms are also frequent after childbirth; a systematic review and meta-analysis reported postnatal anxiety in approximately 15% of women.[4] These symptoms are clinically important because maternal mental

disorders may impair functioning and are associated with adverse consequences for the mother-child relationship and child development.[5]

Quality of life provides a multidimensional assessment of maternal wellbeing beyond the presence or absence of psychiatric symptoms. The WHOQOL-BREF evaluates physical health, psychological health, social relationships, and environmental context.[6] Postpartum studies have linked lower quality of life with depressive symptoms and have identified social support as an important correlate of maternal wellbeing.[7-10] Perceived social support is particularly relevant because it reflects the mother's subjective appraisal that emotional and practical help is available when needed.[8]

Evidence from Indian tertiary-care settings simultaneously examining quality of life, depressive symptoms, anxiety, and perceived social support remains comparatively limited. The present study therefore assessed postpartum quality of life and examined its relationship with depressive symptoms, anxiety symptoms, and perceived social support among mothers attending a tertiary-care hospital in Central Gujarat.

MATERIALS AND METHODS

Study design and setting: This descriptive, observational, cross-sectional study was conducted in the pediatric outpatient department of a tertiary-care teaching hospital in Central Gujarat. Mothers attending routine infant immunization visits at 6, 10, and 14 weeks were recruited between February and November 2024.

Participants and sampling: Postpartum mothers up to 14 weeks after delivery who attended the pediatric outpatient department for routine immunization and provided written informed consent were eligible. Mothers with known major medical, neurological, or psychiatric illness; previously diagnosed severe psychiatric illness such as schizophrenia or bipolar disorder; or inability to comprehend the questionnaire because of language or cognitive limitations were excluded. Participants were recruited using convenience sampling.

Sample size: The study used the formula $n=Z^2PQ/E^2$ with Z=1.96, expected postpartum-depression prevalence P=0.22, Q=0.78, and allowable error E=0.05, yielding an estimated sample of approximately 264. A total of 315 postpartum mothers were ultimately enrolled.

Data collection: A semi-structured proforma recorded sociodemographic, obstetric, postpartum, family, and psychiatric-history variables. Data were collected in one-to-one interviews by the primary investigator. The questionnaires were administered in validated Hindi or Gujarati versions according to participant language preference.

Assessment instruments: Quality of life was assessed using the 26-item WHOQOL-BREF, which yields physical, psychological, social-relationship, and environmental domain scores transformed to a 0-100 scale, with higher scores indicating better quality of life.[6] Depressive symptoms were screened using the 10-item Edinburgh Postnatal Depression Scale (EPDS).[11] Anxiety symptoms were assessed using the seven-item GAD-7 and categorized as minimal (0-4), mild (5-9), moderate (10-14), or severe (15-21).[12] Perceived social support was assessed using the 12-item MSPSS, which measures perceived support from family, friends, and a significant other, with higher scores indicating greater perceived support.[13]

Statistical analysis: Data were entered in Microsoft Excel and analysed using SPSS version 29.0. Continuous variables were summarized using mean and standard deviation and categorical variables using frequencies and percentages. The chi-square test for categorical associations, independent-samples t test or analysis of variance for mean comparisons, Pearson correlation for relationships among quality-of-life, depression, anxiety, and social-support scores, and multiple linear regression for predictors of WHOQOL-BREF domain scores. A p value <0.05 was considered statistically significant.

Ethics: The study protocol was reviewed and approved by the Institutional Human Ethics Committee of GMERS Medical College & Hospital, Gotri, before commencement. Written informed consent was obtained from all participants. [ETHICS APPROVAL NUMBER: IHEC/25/OUT/SRPG0169].

RESULTS

A total of 315 postpartum mothers were included. The mean age was 26 ± 4.3 years. Most participants were homemakers (84.1%); 41.6% had primary education. More than half were multigravida (52.7%), 86.9% were exclusively breastfeeding, and 55.6% were living with in-laws. Family structure was distributed across nuclear (32.7%), joint (35.9%), and three-generation families (31.4%).

The mean overall WHOQOL-BREF score was 76.04 ± 13.09. Mean domain scores were 80.44 ± 15.2 for physical health, 63.02 ± 13.49 for psychological health, 79.5 ± 18.51 for social relationships, and 81.49 ± 13.57 for the environmental domain. The psychological domain had the lowest mean score.

The mean EPDS score was 3.65 ± 5.54; 50 mothers (15.9%) had EPDS scores ≥10. The mean GAD-7 score was 1.73 ± 2.79. Anxiety severity was minimal in 278 (88.3%), mild in 30 (9.5%), moderate in 3 (1.0%), and severe in 4 (1.3%) participants; therefore, 37 (11.8%) had at least mild anxiety symptoms. The mean MSPSS score was 62.54 ± 17.92; perceived support was low in 22 (7.0%), moderate in 120 (38.1%), and high in 173 (54.9%) mothers.

Mothers with EPDS scores ≥10 had lower mean physical, psychological, social, environmental, and overall quality-of-life scores than those with EPDS scores <10 (all $p<0.001$). Similarly, mothers with

anxiety symptoms had lower mean quality-of-life scores across all domains and overall quality of life than mothers with minimal anxiety (all $p<0.001$).

EPDS scores showed negative correlations with physical ($r=-0.59$), psychological ($r=-0.68$), social ($r=-0.60$), and environmental ($r=-0.52$) WHOQOL-BREF domains. GAD-7 scores were also negatively correlated with the physical ($r=-0.56$), psychological ($r=-0.57$), social ($r=-0.45$), and environmental ($r=-0.49$) domains. MSPSS scores correlated positively with physical ($r=0.40$), psychological ($r=0.52$), social ($r=0.68$), and environmental ($r=0.57$) quality of life. All correlations had $p<0.001$.

In multiple linear regression models, higher EPDS scores were significant negative predictors of physical ($\beta=-0.84$), psychological ($\beta=-1.14$), and social ($\beta=-1.10$) quality of life (all $p<0.001$), but not environmental quality of life. Higher GAD-7 scores negatively predicted physical ($\beta=-1.50$; $p<0.001$) and environmental ($\beta=-1.27$; $p<0.001$) quality of life. MSPSS was a significant positive predictor of all four domains ($\beta=0.09$ to 0.51; $p<0.05$ for physical and $p<0.001$ for the other domains). Living arrangement did not significantly predict any domain. Model R^2 values ranged from 0.378 to 0.527.

EPDS scores did not differ significantly across family types ($F=2.92$, $p>0.05$) or between mothers who did and did not shift to their maternal home during the postpartum period ($t=0.06$, $p>0.05$).

Table 1: Selected sociodemographic, obstetric and family characteristics of participants (N=315)

Characteristic	Value
Age, years	26 ± 4.3
Education: Illiterate	21 (6.7%)
Education: Primary	131 (41.6%)
Education: Secondary	95 (30.2%)
Education: Higher secondary	32 (10.2%)
Education: Graduate	31 (9.8%)
Education: Postgraduate	5 (1.6%)
Homemaker	265 (84.1%)
Employed	50 (15.9%)
Hindu religion	261 (82.9%)
Muslim religion	54 (17.1%)
Living with parents	140 (44.4%)
Living with in-laws	175 (55.6%)
Primigravida	149 (47.3%)
Multigravida	166 (52.7%)
Normal vaginal delivery	116 (36.8%)
Episiotomy	100 (31.8%)
Lower-segment caesarean section	99 (31.4%)
Exclusive breastfeeding	274 (86.9%)
Mixed feeding	35 (11.2%)
Formula feeding	6 (1.9%)
Nuclear family	103 (32.7%)
Joint family	113 (35.9%)
Three-generation family	99 (31.4%)
Shifted to maternal home postpartum	140 (44.4%)

Table 2: Quality of life, depressive symptoms, anxiety symptoms and perceived social support (N=315)

Measure/category	Mean ± SD or n (%)	Range
WHOQOL-BREF physical domain	80.44 ± 15.2	14–100
WHOQOL-BREF psychological domain	63.02 ± 13.49	6.25–81.25
WHOQOL-BREF social domain	79.5 ± 18.51	0–100
WHOQOL-BREF environmental domain	81.49 ± 13.57	25–100
Overall QOL score	76.04 ± 13.09	12.5–100
EPDS total score	3.65 ± 5.54	—
EPDS 0–9	265 (84.1%)	—
EPDS ≥10	50 (15.9%)	—
GAD-7 total score	1.73 ± 2.79	—
GAD-7 minimal (0–4)	278 (88.3%)	—
GAD-7 mild (5–9)	30 (9.5%)	—
GAD-7 moderate (10–14)	3 (1.0%)	—
GAD-7 severe (15–21)	4 (1.3%)	—
MSPSS total score	62.54 ± 17.92	—
Low support (≤35)	22 (7.0%)	—
Moderate support (36–60)	120 (38.1%)	—
High support (≥61)	173 (54.9%)	—

WHOQOL-BREF = World Health Organization Quality of Life-BREF; EPDS = Edinburgh Postnatal Depression Scale; GAD-7 = Generalized Anxiety Disorder-7; MSPSS = Multidimensional Scale of Perceived Social Support.

Table 3: WHOQOL-BREF scores according to depressive and anxiety symptom status

Outcome	Group 1	Mean ± SD	Group 2	Mean ± SD	t	p
Physical QOL	EPDS ≥10	62.38 ± 17.38	EPDS <10	83.84 ± 12.06	-8.41	<0.001
Psychological QOL	EPDS ≥10	44.75 ± 13.74	EPDS <10	66.46 ± 10.3	-10.75	<0.001
Social QOL	EPDS ≥10	53.63 ± 20.94	EPDS <10	84.39 ± 13.25	-10.13	<0.001
Environmental QOL	EPDS ≥10	66.25 ± 13.89	EPDS <10	84.36 ± 11.44	-8.75	<0.001
Overall QOL	EPDS ≥10	56.82 ± 12.17	EPDS <10	79.67 ± 9.65	-12.69	<0.001
Physical QOL	Anxiety present	62.5 ± 17.62	No anxiety	82.82 ± 13.15	6.77	<0.001
Psychological QOL	Anxiety present	47.3 ± 15.63	No anxiety	65.11 ± 11.71	6.69	<0.001
Social QOL	Anxiety present	59.29 ± 23.92	No anxiety	82.19 ± 15.89	5.65	<0.001
Environmental QOL	Anxiety present	66.89 ± 13.33	No anxiety	83.43 ± 12.38	7.16	<0.001
Overall QOL	Anxiety present	59.03 ± 13.73	No anxiety	78.31 ± 11.22	8.20	<0.001

EPDS comparison: n=50 with EPDS ≥10 and n=265 with EPDS <10. Anxiety comparison: n=37 with anxiety symptoms and n=278 with minimal anxiety. Independent-samples t tests were reported.

Table 4: Pearson correlations between clinical scales and WHOQOL-BREF domains (N=315)

Variable	Physical r (p)	Psychological r (p)	Social r (p)	Environmental r (p)
EPDS	-0.59 (<0.001)	-0.68 (<0.001)	-0.60 (<0.001)	-0.52 (<0.001)
GAD-7	-0.56 (<0.001)	-0.57 (<0.001)	-0.45 (<0.001)	-0.49 (<0.001)
MSPSS	0.40 (<0.001)	0.52 (<0.001)	0.68 (<0.001)	0.57 (<0.001)

EPDS = Edinburgh Postnatal Depression Scale; GAD-7 = Generalized Anxiety Disorder-7; MSPSS = Multidimensional Scale of Perceived Social Support.

Table 5: Multiple linear regression models for WHOQOL-BREF domains (N=315)

Predictor/model statistic	Physical	Psychological	Social	Environmental
EPDS	-0.84 (<0.001)	-1.14 (<0.001)	-1.10 (<0.001)	-0.19 (>0.05)
GAD-7	-1.50 (<0.001)	-0.56 (>0.05)	0.08 (>0.05)	-1.27 (<0.001)
MSPSS	0.09 (<0.05)	0.16 (<0.001)	0.51 (<0.001)	0.32 (<0.001)
Living arrangement	1.06 (>0.05)	-0.39 (>0.05)	1.21 (>0.05)	-0.29 (>0.05)
Model R^2	0.378	0.494	0.527	0.410
Adjusted R^2	0.370	0.487	0.521	0.403
F value	47.24	75.74	86.34	53.94
Model p	<0.001	<0.001	<0.001	<0.001

EPDS = Edinburgh Postnatal Depression Scale; GAD-7 = Generalized Anxiety Disorder-7; MSPSS = Multidimensional Scale of Perceived Social Support.

DISCUSSION

This study found that postpartum mothers had a mean overall WHOQOL-BREF score of 76.04, with the psychological domain scoring lower than the physical, social, and environmental domains. Depressive symptoms, anxiety symptoms, and perceived social support were strongly associated with postpartum quality of life: higher EPDS and GAD-7 scores were inversely related to all four WHOQOL-BREF domains, whereas higher MSPSS scores were positively related to each domain. In multivariable analysis, perceived social support remained a positive predictor across all domains, while depressive and anxiety symptoms showed negative associations in specific domains.

The lower psychological-domain score is consistent with the concept that emotional adaptation may remain vulnerable even when physical recovery is relatively satisfactory. Postpartum quality-of-life studies have similarly identified psychological symptoms and social context as important correlates of maternal wellbeing.[9,14] The present findings therefore support evaluating postpartum health as a multidimensional outcome rather than relying on physical recovery alone.

Fifteen point nine per cent of participants had EPDS scores ≥10. This proportion is close to the global estimate of approximately 17.2% reported by Wang et al.[2] and below the pooled Indian prevalence of 22% reported by Upadhyay et al.[3] Because the EPDS is a screening instrument rather than a diagnostic interview, the result should be interpreted as the proportion screening at risk for postpartum depression rather than as a confirmed prevalence of depressive disorder. The observed association between higher depressive-symptom burden and poorer quality of life across all domains is consistent with previous evidence linking perinatal depression with poorer maternal quality of life.[7]

At least mild anxiety symptoms were present in 11.8% of participants. A systematic review and meta-analysis have shown that anxiety is common during the postnatal period and warrants assessment alongside depression.[4] In this study, anxiety symptoms were associated with lower mean quality-of-life scores across all domains, while multivariable models showed significant negative associations with the physical and environmental domains. These findings indicate that postpartum anxiety contributes to maternal functional burden even when depressive symptoms are considered separately.

Perceived social support was high in more than half of the sample, and MSPSS scores showed positive correlations with all WHOQOL-BREF domains, strongest for the social domain. This pattern is consistent with literature describing social support as an important correlate of maternal mental health and health-related quality of life.[8,15] The multivariable findings are particularly notable because social support remained positively associated with all four quality-of-life domains, whereas the structural living-arrangement variable did not. This distinction supports the importance of a mother's subjective experience of available support rather than assuming that co-residence or family structure necessarily reflects supportive relationships.

The study has several strengths. It assessed quality of life, depressive symptoms, anxiety symptoms, and perceived social support within the same postpartum sample; used standardized instruments; included 315 mothers; and recruited women during routine infant immunization visits, a setting in which mothers have repeated contact with healthcare services. The analysis also incorporated correlations and multiple linear regression to examine relationships among the principal psychological and social variables.

The findings should be interpreted in light of the study limitations. The cross-sectional design does not establish temporal or causal relationships. Recruitment from a single tertiary-care hospital and use of convenience sampling limit generalizability. Mothers not attending immunization visits or those with severe illness or distress may have been underrepresented. Depression and anxiety were evaluated with screening scales rather than structured diagnostic interviews. Measures were self-reported, and potentially relevant factors including marital satisfaction, domestic violence, sleep disturbance, stressful life events, and infant-related factors were not assessed. In addition, the early-postpartum assessment does not describe changes over time.

Within these limitations, the study suggests that postpartum assessment in maternal and child health settings may benefit from attention to quality of life, depressive and anxiety symptoms, and perceived social support together. The observed associations also support further longitudinal and multicentre work to clarify temporal relationships and the role of psychosocial support.

CONCLUSION

Among postpartum mothers attending a tertiary-care hospital in Central Gujarat, psychological quality of life was lower than the other WHOQOL-BREF domains, 15.9% screened at risk for postpartum depression, and 11.8% had at least mild anxiety symptoms. Greater depressive and anxiety symptom burden was associated with poorer quality of life, whereas greater perceived social support was associated with better quality of life across all domains. These cross-sectional findings highlight the close relationship among postpartum mental health, perceived support, and maternal quality of life without establishing causality.

Declarations

Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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Ethical Approval

The study protocol was reviewed and approved by the Institutional Human Ethics Committee of GMERS Medical College & Hospital, Gotri. [ETHICS APPROVAL NUMBER: IHEC/25/OUT/SRPG0169].

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