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Socio-demographic Disparities, Risk Factors, and Prevalence of Postpartum Depression Among Urban and Rural Women in Basrah, Iraq

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Abstract

Background: Postpartum depression (PPD) is a major public health issue affecting maternal well-being and family dynamics globally. Geographic disparities in mental health outcomes are increasingly recognized, yet comparative data from regions such as southern Iraq remain scarce.

Objective: To compare the prevalence and risk factors of PPD among urban and rural women in Basrah, Iraq, to inform targeted mental health interventions.

Methods: This comparative cross-sectional study recruited 270 postpartum women (135 urban, 135 rural) between October 2023 and October 2024 from healthcare facilities across Basrah. Participants were 4 - 12 weeks postpartum, aged ≥18 years, and free from pre-existing psychiatric diagnoses. The Edinburgh Postnatal Depression Scale (EPDS) was administered to assess depressive symptoms, with a score ≥13 indicating probable clinical depression. Additional data on demographics, obstetric history, and psychosocial factors were collected via structured interviews.

Results: PPD prevalence was significantly higher among rural women (31.9%) compared to urban women (22.2%). Severe depression (EPDS ≥15) was nearly twice as common in rural areas (18.5% vs 10.4%). Rural participants reported higher rates of unplanned pregnancy (37.8% vs 21.5%, p = 0.008), low social support (42.6% vs 28.9%, p = 0.041), and lack of postnatal care (29.6% vs 14.1%, p = 0.016). In multivariate analysis, no postnatal care (OR = 2.59; 95% CI: 1.40–4.78), unplanned pregnancy (OR = 2.14; 95% CI: 1.23–3.72), and low social support (OR = 1.75; 95% CI: 1.02–3.01) were independently associated with elevated PPD risk in rural settings.

Conclusion: Rural women in Basrah face a disproportionate burden of PPD, driven by modifiable risk factors such as lack of postnatal care and psychosocial support. These findings underscore the need for routine mental health screening, enhanced postnatal services, and culturally sensitive interventions to address maternal mental health disparities across geographic contexts in Iraq.

Keywords: Postpartum depression, Rural health, Urban-rural disparities, Maternal mental health

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Introduction

PPD represents one of the most prevalent mental health disorders among new mothers, affecting emotional well-being, maternal-infant bonding, and overall family health [1]. It is increasingly recognized as a global public health challenge with varied presentations across different sociocultural and geographic contexts [2].

The postpartum period introduces significant physiological and psychosocial transitions, often amplifying vulnerability to depressive disorders, especially in the presence of stressors like lack of support, economic hardship, or obstetric complications [3].

Urbanization has long been associated with an increased burden of mental illness, including PPD, due to higher exposure to social isolation, unemployment, housing insecurity, and reduced familial support networks [4]. Studies show that women residing in urban environments may exhibit a higher prevalence of depressive symptoms post-birth compared to rural counterparts, although findings vary across regions and populations [5].

Conversely, rural populations often face unique vulnerabilities such as limited access to healthcare, transportation barriers, and stigmatization of mental health conditions, which can also elevate the risk of PPD [6]. These disparities necessitate a nuanced understanding of how geographic location intersects with sociocultural and health system factors to influence maternal mental health outcomes [7].

Further complexity arises from evidence showing that the risk factors for PPD vary not just by geography, but also by maternal age, parity, socioeconomic status, and prior mental health history [8]. For instance, young urban mothers may be disproportionately affected by social stressors such as preterm birth, single motherhood, and postpartum complications [3].

Meanwhile, rural women may encounter heightened risks due to unwanted pregnancies, poor social support, and financial instability, all of which are well-established contributors to postpartum mental distress [9].

Despite growing attention, there remains a notable gap in comparative studies that dissect the influence of urban versus rural residency on the onset and severity of PPD using standardized methodologies across diverse populations [10]. Without such data, tailored prevention and intervention strategies remain underdeveloped.

This study aims to compare the prevalence and risk factors of PPD between urban and rural populations, identifying location-specific vulnerabilities to inform targeted mental health interventions and enhance maternal care policies at the community and healthcare system levels.

Method

Study design

This research utilized a comparative cross-sectional design to investigate the prevalence and associated risk factors of PPD among women residing in urban and rural areas of Basrah, Iraq. The design enabled a meaningful comparison of mental health outcomes during the early postpartum period across different geographical settings.

Study setting and population

The study was conducted across multiple healthcare centers in urban and rural districts of Basrah over a 12-month period from October 2023 to October 2024. Urban participants were recruited from general hospitals and central maternal clinics, while rural participants were selected from primary healthcare centers servicing peripheral districts. Eligible participants met the following criteria:

- Aged 18 years or older
- Between 4 - 12 weeks postpartum
- Provided informed consent

Women with a history of diagnosed psychiatric illness (excluding prior PPD) or those with life-threatening postpartum complications requiring ICU admission were excluded.

Sample size

The final study sample included 270 women, divided equally between urban (135) and rural (135) areas. This sample size was selected to ensure adequate statistical power while considering logistical feasibility and regional population distribution.

Data collection instruments

EPDS

PPD was assessed using the EPDS, a widely validated 10-item self-report questionnaire developed specifically to screen for emotional distress in postpartum women. Each of the 10 items on the EPDS addresses symptoms such as:

Table 1: Participant characteristics by residence.

Characteristic		Urban	Rural	p-value
Age	18 - 27 years	46.7%	38.5%	0.021
	28 - 37 years	42.2%	48.2%	0.183
	>38 years	11.1%	13.3%	0.524
Parity	Primiparous	37.8%	30.4%	0.171
	Multiparous 2 – 3	41.5%	35.6%	0.342
	Multiparous ≥4	20.7%	34.1%	0.029
Educational level	No formal education	2.2%	10.4%	0.017
	Primary education	11.9%	25.2%	0.003
	Secondary education	11.9%	23.0%	0.020
	Higher education	74.1%	41.5%	<0.001

Table 2: PPD prevalence and severity by residence.

Group	Mild (EPDS 10 – 12)	Moderate (EPDS 13 – 14)	Severe (EPDS ≥15)	Overall PPD
Urban	18.5%	10.4%	10.4%	22.2%
Rural	22.2%	15.6%	18.5%	31.9%

Table 3: Risk factors for PPD by residence.

Risk factor	Urban	Rural	p-value
Unplanned pregnancy (%)	21.5%	37.8%	0.008
Low social support (%)	28.9%	42.6%	0.041
No postnatal care (%)	14.1%	29.6%	0.016
Antenatal complications (%)	12.6%	20.7%	0.093

Table 4: Odds ratios for risk factors of PPD by residence.

Risk factor	Odds ratio (Rural)	95% CI (Rural)	p-value
Unplanned pregnancy	2.14	1.23 - 3.72	0.007
Low social support	1.75	1.02 - 3.01	0.042
No postnatal care	2.59	1.40 - 4.78	0.003
Antenatal complications	1.56	0.89 - 2.74	0.111

- Anhedonia (loss of pleasure).
- Guilt or self-blame.
- Anxiety or panic.
- Sleep disturbances.
- Suicidal thoughts.

Each item is scored on a 4 point Likert scale (0 - 3), with total scores ranging from 0 - 30. A cutoff score of ≥13 was used to indicate probable PPD, consistent with international and regional standards [2].

- 0 - 9: No or minimal symptoms of depression.
- 10-12: Possible mild depression (requires further monitoring).
- 13 or above: Probable clinical depression (further assessment recommended).
- Any non-zero score on item 10 (suicidal ideation): Immediate attention required.

The EPDS was administered in its Arabic-translated and culturally adapted version, ensuring relevance and comprehension in the Basrah population.

Additional Questionnaire: A structured interview was conducted to collect:

- Demographic data (age, education).
- Obstetric details (parity).
- Psychosocial factors (support systems, relationship quality).

Data collection procedure

Trained female health researchers administered the EPDS and structured questionnaire in one-on-one, private settings within each healthcare facility. All participants were provided with a clear explanation of the study objectives, and written informed consent was obtained prior to participation.

Data analysis

All responses were coded and analyzed using SPSS software. Descriptive statistics were used to characterize the sample. Chi-square and t-tests were applied for bivariate analysis, while multivariate logistic regression was used to identify independent predictors of PPD. A p-value of <0.05 was considered statistically significant.

Ethical consideration

The study protocol received ethical approval from the Basrah Health Directorate. All participants were assured of confidentiality and their right to withdraw from the study without impacting on their care.

Results

Urban women tend to be younger and significantly more educated than rural women, with 74.1% having higher education versus 41.5% in rural areas ($p < 0.001$). Rural women show higher grand multiparity rates (34.1% vs 20.7%, $p = 0.029$), indicating differences in reproductive patterns and educational access.

PPD is more prevalent and severe among rural women, with an overall rate of 31.9% compared to 22.2% in urban areas. Severe PPD is nearly twice as common in rural settings (18.5% vs 10.4%), highlighting a greater mental health burden.

Rural participants report higher rates of unplanned pregnancy, low social support, and lack of postnatal care-all significant PPD risk factors. These disparities point to structural gaps in rural maternal care and support.

Lack of postnatal care (OR = 2.59), unplanned pregnancy (OR = 2.14), and low social support (OR = 1.75) significantly increase PPD risk in rural women. These findings stress the need for improved postnatal services and support systems in rural areas.

Discussion

This study identified a significant burden of PPD among women in Basrah, Iraq, with a notably higher prevalence in rural areas (31.9%) compared to urban settings (22.2%). These findings align with a 2015 study conducted in Basrah, which reported a PPD prevalence of 31.5% using the EPDS and highlighted key psychosocial and obstetric predictors such as prior depressive symptoms, anemia, and exposure to domestic conflict [11].

In our study, rural participants had lower educational levels and higher rates of multiparity, which significantly contributed to depressive symptoms—factors also observed in other local studies, such as among mothers of children with cancer in Basrah, where maternal depression was strongly associated with low education and income levels [12].

We found that unplanned pregnancy, low social support, and lack of postnatal care were significant independent predictors of PPD. These findings reinforce the conclusions of a nationwide Iraqi study involving 1,608 mothers, which found that low income, limited family support, and unplanned pregnancies significantly elevated the risk of PPD [13].

Similarly, a study in Erbil reported a 28.4% prevalence of PPD and linked it to histories of psychiatric illness, cesarean delivery, and lack of family support, reinforcing our findings on the significance of interpersonal dynamics and healthcare access in shaping mental health outcomes [14].

Furthermore, rural women's increased vulnerability to depression may also be compounded by poor mental health literacy and cultural stigma surrounding emotional disorders, which remains a challenge across much of southern Iraq. This is echoed in research on depression among infertile women in Basrah, where psychological distress was prevalent but underrecognized, especially in the presence of gender-related stress and societal expectations [15].

Although antenatal complications were more common in rural women in our study, they did not independently predict PPD in the multivariate analysis. This suggests that psychosocial and structural stressors may outweigh physical health conditions in driving postpartum distress similar to findings from studies in Ilam and Khuzestan provinces, where employment stress, delivery type, and seasonal birth patterns were more impactful predictors than obstetric history [16, 17].

Strengths and Limitations

This is one of the few comparative studies of PPD in urban vs rural settings in southern Iraq. The study's use of a standardized tool EPDS, inclusion of both geographic groups, and identification of actionable predictors such as support systems and unplanned pregnancy contribute valuable insights for intervention.

Limitations include its cross-sectional design, which restricts

causal interpretation. Moreover, cultural norms might have influenced women's willingness to report emotional difficulties, potentially leading to an underestimation of PPD prevalence.

Conclusion

This study highlights a high prevalence of PPD in Basrah, with rural women facing greater risk due to factors like unplanned pregnancy, low social support, and lack of postnatal care. These findings point to the urgent need for routine PPD screening and targeted interventions, particularly in rural areas. Integrating mental health support into maternal care and training healthcare workers to recognize depressive symptoms can significantly improve outcomes for mothers and families across Iraq.

Acknowledgements

None.

Conflict of Interest

None.

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