

Clinical and social factors contributing to postpartum mental health among women during 6-12 months of childbirth in Nepal: A mixed method study

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Key Topics/Overview of Presentation

- 1) Background
- 2) Methodology
- 3) Results
- 4) Key Findings
- 5) Implications and future recommendations

Background: Statistics

- Postpartum mental health (PMH) issues (such as, depression) is considered a significant public health challenges globally that can have long-lasting and multigenerational consequences.
- Postpartum depression (PPD) is one of the most common mental health problems (Gelaye et al., 2016) affecting about 17.22% of postpartum women globally (Wang et al., 2021) with 12% to 16% in the United States (US).
- Among 7.2% women identified with PPD at 9 to 10 months postpartum population-based study in US, 57.4% had not reported depressive symptoms at 2 to 6 months postpartum (Robbins et al., 2023).

Background: Statistics and Significance

- Highest prevalence was found in lower-middle-income countries (LMICs) with a pooled prevalence of 25.5% in which 1 in 4 perinatal women suffered with PPD in LMICs
- **The prevalence of PPD is varied across studies in Nepal**-14.7% to 30% of mothers suffered from PPD (Bhusal et al., 2016; Giri et al., 2015; Pradhananga et al., 2020)
- The problem is often neglected, underidentified, and untreated affecting the health and well-being of both mothers and infants (Dadi et al., 2020).
- Examination of prevalence and factors associated with PPD in the later postpartum period is important

Background and Significance

PPD may contribute to impaired mother-infant bonding, which is foundational for long-term developmental outcomes among children (Anderson & Cacola, 2017; Faisal-Cury et al., 2021; Liu, et al., 2021; Stefana & Lavelli, 2017, Pudasainee-Kapri et al. -under review).

In its most severe form, PPD can result in obtrusive thoughts of and attempts at suicide and harm to infants (Slomian et al., 2019)

>60% of pregnancy-related deaths due to mental health occur 43 to 365 days postpartum in the US (Trost et al., 2021)

Background and Significance

- Low birth weight (LBW) and/preterm birth has been identified as potential risk factors for PPD globally (Anderson & Cacola, 2017; Neri et al., 2015; Trumello et al., 2018)
- Socio-demographic and perinatal factors may also compound the risk for poor outcomes (Leahy-Warren et al., 2020; Li et al., 2020).

Current SDG's Recommendation for Maternal and Infant Wellbeing in Nepal

Maternal and child mortality reduction remains a priority under “Goal 3: Ensure healthy lives and promote well-being for all at all ages” in the SDGs agenda through 2030.



Targets

3.1. Reduce MMR to <70/100,000 live births

3.2. End preventable deaths of newborns and <5 children, reduce NMR to 12/1,000 live births/<5-mortality rate to 25/1,000 live births

Research Gaps

Although, disparities existed in PMHs, most studies has examined this issue during early postpartum period

- Limited research to date has estimated the PMH issues after 6 months of childbirth in Nepal
- Insufficient research to date examined the specific clinical and social determinants contributing to disparities in PPD among postpartum women after 6-months of childbirth in Nepal
- To our knowledge, no qualitative research to date examined postpartum women's lived experiences of barriers and facilitators related to mental health issues in Nepal



Study Aims/Purposes



- estimate the prevalence of PPD for 6-12 months postpartum women
- examine the unique clinical and **social determinants** contributing to disparities in PPD in Nepal
- explore women's perspective of factors contributing to PMH after childbirth in Nepal

Research Questions

What is the effects of clinical and social determinants in PPD among women 6-12 months of postpartum?

What is the lived experience of women about factors contributing to their mental health during 6-12 months of postpartum ?

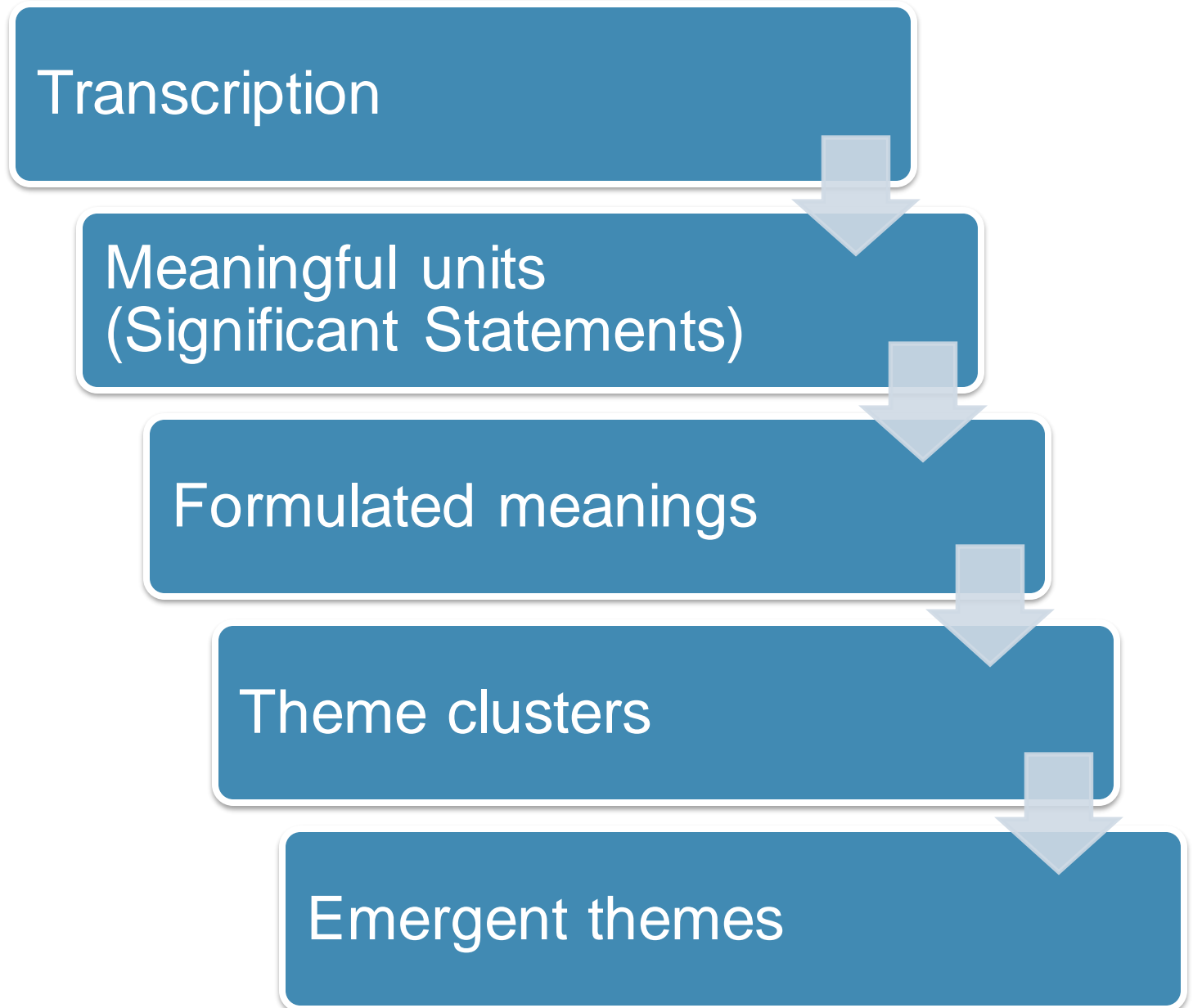
Methodology: Design, Settings, and Population

- ❑ **Cross-sectional, mixed-method, multi-site study** among postpartum women with LBW and NBW infants 6-12 months attending immunization clinics
- ❑ **Settings:** Kanti Children's Hospital and Tribhuvan University Teaching Hospital Kathmandu, Nepal
- ❑ **Ethical Considerations:** Approvals were obtained from Rutgers University, Nepal Health Research Council (NHRC) along with IRC and administrative approvals from the research sites.

Methodology: Sampling, Data Collection, Measures

	Quantitative	Qualitative
Sampling Techniques and Sample Size	Convenience sampling 200 postpartum mothers	15 purposively selected postpartum women with EPDS scores >9
Instruments	Sociodemographic & perinatal history questionnaire Food security, violence, social support, EPDS (10 items) Standard instrument	Interview Guide (Nepali)
Data collection	Survey using standardized questionnaires (Nepali version)	In-depth Interviews
Data Analysis	SPSS version 28.0 Descriptives/Regression Analysis	Colaizzi method of data analysis

**Qualitative Data
Analysis using
Collaizi Method**



Quantitative Results: Descriptive Statistics

- Mean age of infant was **9.96** months ($SD = 1.424$)
- **56% of infants** were male, **80% of infants** were born in government/public hospitals
- Participants were **ethnically diverse** including 56.5% Bramhin/Chhetri, 36.5% Janatati, followed by Madhesi (1.0%), and Dalit (6.0%).
- About 53% of mothers had caesarean delivery
- **90% of participants** were currently breastfeeding/feeding pumped milk
- **39% (n=78)** of participants reported having **anxious thoughts** and **29% (n=58)** reported **depressive thoughts** during their pregnancy
- The mean age of women was **29.02 years**, and infant's fathers mean age during childbirth was **32.24**.

Table 1: Descriptive Statistics of Participants

Variables	N/Mean (% / SD)		
Infant Age in Months	9.96 (1.424)	Participant (Mother) education	
Infant sex		Primary	5 (2.5%)
Female	88 (44.0%)	Middle School	19 (9.5%)
Male	112 (56.0%)	Secondary	28 (14.0%)
Participant's Ethnicity		Higher Secondary	74 (37.0%)
Dalit	12 (6%)	Bachelor	39 (19.5%)
Janajati	73 (36.5%)	Master's level/higher	35 (17.5%)
Madhesi	2 (1.0%)	Fathers' education	
Bramhan Chetri	113 (56.5%)	Primary	8 (1.0%)
Place of infant's birth		Middle School	18 (9.0%)
Home	1 (0.5%)	Secondary	34 (17.0%)
Government hospital/Public health center	180 (90.0%)	Higher Secondary	56 (28.0%)
Private Hospital	19 (9.5%)	Bachelor	42 (21.0%)
Type of delivery		Master's level/higher	42 (21.0%)
Vaginal	92 (46.0%)	Income sufficient for household expenditure	
Vaginal Assisted Delivery	2 (1.0%)	<6 months	41 (20.5%)
Caesarean Section	106 (53.0%)	6-11 months	19 (9.5%)
Breastfeeding to infants		12 months	75 (37.5%)
After birth	184 (92.0%)	>12 months	65 (32.5%)
Currently feeding	180 (90.0%)		
Prior LBW	16 (8.0%)		
Maternal age (in years)	29.02 (4.631)		
Father's Age at childbirth (in years)	32.24 (5.184)		

Results: Key Findings

EPDS Scores

-----+-----	N	%
Mild (0-6)	103	51.5
Moderate (7-9)	41	20.5
Severe (>9)	56	28
-----+-----		

- **28% (n=56)** participants had EPDS scores 10 or higher indicative of PPD who met the criteria for referral for further evaluation and monitoring.

Results: Regression Analysis

- Results indicated that perinatal factors including *prenatal anxiety and preterm birth* significantly predicted higher levels of PPD during 6-12 months childbirth
- Also, unique social determinants including *exposure to violence, lack of food security, and inadequate postpartum social support* significantly associated with PPD symptoms.
- **Control Variables:** low birth weight, women's educational level, and depressive thoughts during pregnancy

Results: Model 1: Clinical and Social Factors Associate d with PPD

Model 1: explained 42.1% of variance in PPD.

Variables	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	6.926	6.096		1.136	.257
Food security	-1.077	.278	-.235	-3.869	<.001
Violence exposure	.336	.155	.145	2.164	.032
Experienced anxious thoughts during pregnancy	2.621	.874	.238	2.998	.003
Postpartum social support	-.488	.120	-.263	-4.063	<.001
Infant's gestational age at birth	.349	.123	.179	2.832	.005

1. Dependent Variable: Postpartum depression (EPDS)
2. Control Variables: Low birth weight, women's education, depressive thoughts during the pregnancy

Model 1: explained 42.1% of variance in PPD

Theme-Clusters and Emergent Themes on Women's Experience: Contributing Factors for Mental Health

Theme-Clusters	Emergent Themes
<ul style="list-style-type: none"> ● Spouse substance use status ● Intimate partner violence ● Lack of spouse support 	<p style="text-align: center;">Spouse support and relationships</p>
<ul style="list-style-type: none"> ● Economic hardship ● Economic dependency ● Inadequate family support for infant care ● Family disintegration 	<p style="text-align: center;">Income and family support</p>
<ul style="list-style-type: none"> ● Birth weight/gestational age ● Infants' health and developmental problems ● Maternal health problem ● Psychological distress during pregnancy 	<p style="text-align: center;">Infant and maternal health status</p>

Emerging Themes

- **Spouse substance use status**
- **Intimate partner violence**

Illustrative Quotes

““Drinking and Screaming, beating me is regular activity (weekly to monthly) for him. Sometimes he also beats to my daughter. I feel to cry for the situation. But if I cry, he will beat me again and scream at me. There is no other option but to cry. There is no way to tell or share this to anyone. It hurts my feeling a lot. I want to die”
(Participant 4, woman belongs to a nuclear family, residing in Kathmandu from countryside, husband having a temporary job)

- **Economic dependency**

I left the job because of pregnancy related symptoms. My husband tortured me when I asked for money. I regret to have baby. Instead, it would better I continued my job. (P 6, 22 years, primiparous women with a girl infant, unplanned pregnancy)



Conclusions

- ❑ The prevalence of PPD is 28% among postpartum women during 6-12 months of childbirth in Nepal
- ❑ Multiple clinical and social determinants significantly predicted PPD during critical stages of infant development.
- ❑ Postpartum social support can serve as a protective factor for better mental health among women.
- ❑ *Mixed method exploration of PMHs: Consistent results* of factors contributing to PMH among women 6-12 months postpartum.

Limitations

- There is a possibility of **recall/social desirability bias** due to self-reported data regarding mental illness symptomatology
- A **causal association** can not be inferred due to the cross-sectional nature of the data
- The study was limited only to the immunization clinics of tertiary hospitals in Nepal, so research findings cannot be **generalized to all postpartum mothers and infants** living in different geographic locations or at the national level.



Implications



- These findings have important implications for obstetric and pediatric providers and nurses for **screening, early identification, and prompt treatment and/referral** of women at-risk for PPD.
- Providers should use **well-validated measures to screen for PMH issues** across first years of postpartum in Nepal
- Findings have important implications to researchers **to design tailored interventions targeting women during their perinatal period** to reduce risks of PMH issues and enhance health equity in postpartum mental health and infant outcomes

Future Recommendations

- **Nationwide awareness initiatives to decrease stigma** associated with PPD and other mental health issues are needed
- Future research should **investigate the mechanisms in the link among these constructs** within the first year of the postpartum period
- Future research should **design community-based tailored interventions targeting perinatal women** to reduce PMH issues and implement strategies to mitigate its potential long-term impact on maternal and infant wellbeing and to achieve SDGs targets in Nepal.

Recommendations



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Thank you very much!!!!



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