

Investigating the Relationship of Financial Hardships with Postpartum Depression in Maternal Health of Pakistani Women: A Cross-Cultural Study

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Abstract: The aim of this study is to investigate the impact of financial hardships on postpartum depression among Pakistani women. In Pakistan, many women face postpartum depression during and after their pregnancies once or twice but receive very little care in hospitals and homes, which is alarming. Many women are not financially stable, and that's why they don't go for postpartum therapy. In fact, many women face financial hardships during pregnancies, and this issue leads to postpartum depression as well. This was a quantitative, descriptive, correlational research design. For this study, more than 150 females were requested to fill out the questionnaires via online and face-to-face meetings and finally received 103 (from Peshawar, Islamabad, and Lahore) complete responses, so the retrieving rate was 68.7%. The results of the current study stated that the relationship between financial hardships and postpartum depression in maternal health is positive and significant. This study is of great theoretical significance from the Pakistani perspective and of practical significance because it will help medical health practitioners design policies to reduce the financial hardships for women to improve their health during maternity.

Keywords: Postpartum Depression, Maternal Health, Financial Hardships, Regression Analysis, Correlation Analysis

Introduction

The journey into motherhood, often romanticized as a period of unbridled joy and fulfilment, can also usher in an array of psychological challenges, notably Postpartum depression (PPD). Postpartum depression, a psychological health condition that impacts many mothers after childbirth, encompasses symptoms ranging from mild mood disturbances to severe depressive episodes. While the aetiology of PPD is multifaceted, encompassing biological, psychological, and social factors, this research focuses on a specific yet critical aspect: the exacerbation of postpartum depression due to financial hardships (Marcil et al., 2020).

Postpartum depression (PPD) is a common and serious mental health condition that affects many women after childbirth. It can impair the mother's ability to bond with her baby, care for herself and her family, and function at work or school. PPD can also have negative consequences for the child's development, behaviour, and wellbeing (Agrawal et al., 2022).

The causes and risk factors of PPD are complex and multifaceted, involving biological, psychological, and social factors. One of the important social factors that may influence the onset and severity of PPD is financial hardship. Financial hardship refers to the experience of economic stress, such

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as difficulty paying bills, having debts, worrying about money, or being unable to afford basic needs. Financial hardship can affect the mental health of postpartum women by increasing their exposure to stressors, reducing their access to health care and social support, and undermining their sense of control and self-efficacy (Carlson et al., [2024](#))

However, the relationship between financial hardship and PPD may not be the same across different cultural contexts. Culture can shape the way people perceive, express, and cope with mental health problems, as well as the availability and acceptability of mental health services. Therefore, it is important to examine how financial hardship and PPD interact in different cultural settings and how culture-specific factors may moderate or mediate this interaction (Taylor et al., [2021](#)).

Financial hardships, an often-overlooked factor, play a pivotal role in the mental health of new mothers. The financial hardships during and after pregnancy associated with healthcare costs, childcare, loss of income due to maternity leave, or unemployment can be overwhelming. For mothers already susceptible to or suffering from postpartum depression, financial difficulties can act as a catalyst, intensifying symptoms and hindering recovery. This connection of financial hardships with PPD creates a vicious cycle where financial hardship exacerbates PPD, and the debilitating nature of PPD further impedes the ability to engage in productive work, thus worsening financial hardship (Kim et al., [2020](#)).

Tebeka ([2021](#)) reported in his study about the occurrence and aspects of postnatal depression among poor rural maternal figures in Bangladesh using a cross-sectional survey. He found that more than half of the mothers had depressive symptoms, which were linked to Age, food insecurity, and violence and also reported higher healthcare costs and coping strategies among depressed mothers. The author recommended community-based interventions and health financing options to address the problem.

Relationship between Financial hardship and Postpartum Depression

Financial hardships are a common source of stress and anxiety for many women during and after pregnancy. According to a cross-sectional study of more than 4,000 U.S. women, financial hardship was strongly associated with unmet healthcare needs, healthcare non-affordability, and general financial hardship for up to 15 years after giving birth. These factors might lead to the formation or exacerbation of postnatal depression, a serious mental health condition that affects up to fifteen percent of women worldwide. Therefore, it is important to screen and provide adequate mental health support for low-income pregnant and postpartum women, as well as to address the underlying causes of financial hardship in this population (Taylor et al., [2021](#)). Thus, the author concluded that the challenge faced by mothers with postpartum depression is financial hardship. It seeks to unravel the complexities of this intersection and its implications on maternal health, aiming to foster a more nuanced understanding and response to this critical public health issue.

Prior to the 19th century, the knowledge and formulation of postpartum depression by Western medical science has changed. Thoughts on women's emotions and states have long existed, mostly documented by men. Hippocrates described the madness, agitation, and puerperal fever that women would undergo following childbirth in 460 B.C. Hippocrates' theories continue to influence modern perspectives on postpartum depression. Without a formal diagnosis, Castello Branco, a 16th-century physician, recorded a case of postpartum depression in which a very healthy woman had melancholy following childbirth, stayed mad for a month, and then recovered with medical intervention (Elbl, [2023](#)). For the centuries that followed, postpartum depression was treated experimentally despite the fact that this treatment was not documented. A shift in perspective regarding the connection between menstruation, pregnancy, and mental illness in women emerged in the 19th century. The scientific community did not change its mindset until the beginning of the twentieth century. Many professions in the field of medical and mental health agreed to move toward more "scientific theories" that included an expanding medical perspective on mental illness (Scharp & Thomas, [2017](#)).

Postpartum Depression

Certain writers opt to refer to it as "perinatal depression", defined as any significant or minor depressive episode that begins during pregnancy or within the first year following childbirth. It is projected to occur in about one out of every seven women (Stuart & Stuart, [2014](#))

Wisner ([2017](#)), a psychiatrist who specializes in perinatal mental health characterize postpartum depression as a clinical illness marked by enduring depressive symptoms that follow childbirth. She might stress how crucial it is to take into account both biological and psychosocial elements while diagnosing and treating postpartum depression. (Pellowski et al., 2019). A study was conducted on the significance of perceived stress and how people's subjective assessments of their financial circumstances have a significant impact on how stressed out they feel (Davis & Mantler, [2004](#)).

Mulyani et al., 2023, conducted a meta-analysis study, and the focus of the study was the effects of Family Support, Family Income and Domestic Violence on Postpartum Depression. In the study, it was reported that a type of depression known as postpartum depression affects the happiness and emotional bond between a mother and her child throughout the puerperium. It manifests as particular symptoms that start to show up four to six weeks after childbirth and can linger for months. Using a meta-analysis, the study attempts to assess the impact of domestic violence, family economic levels, and assistance on the occurrence of depression in postpartum women. There is a statistically significant reduction in the likelihood of postpartum depression with strong family support. A family with a high income lowers their postpartum depression risk dramatically. Postpartum depression is more likely to occur in victims of domestic abuse. (Mulyani et al., [2023](#))

A study was conducted by Yakupova et al. ([2023](#)) to examine socioeconomic factors in relation to increased risk for postpartum depression and PTSD (Post-Traumatic Stress Disorder) in the Russian population, including the family's economic position, the location of childbirth, and the kind of birthing healthcare plan. The mother's economic situation was found to have a statistically significant impact on the severity of symptoms of postpartum depression. The findings of this study support earlier research conducted in Russia and other nations, showing the significance of socioeconomic factors in the aetiology of PTSD and postpartum depression (Yakupova et al., [2023](#))

Operational Definitions

Postpartum Depression

Postpartum depression is a type of mood condition that affects women () after childbirth and causes symptoms such as sadness, anxiety, irritability, difficulty bonding with the baby, and thoughts of harming oneself or the baby (Carlson et al., [2024](#))

Financial Hardship

Financial hardships are situations where people struggle to pay their bills, debts, or living expenses due to various reasons. Financial hardships can harm people's wellbeing and access to essential services (Ryu & Fan, [2023](#)).

Maternal Health

Maternal health can be defined here as a "health and wellbeing of mothers before pregnancy, during pregnancy, during and after childbirth". This is a time period of a woman's life where her health and wellbeing as well as that of her child can be at most risk (WHO, [2019](#)).

Objectives of the Study

The following are the objectives of the study:

1. To explore how financial hardships affect the severity and length of postpartum depression.
2. To investigate how mothers from different economic backgrounds cope with postpartum depression.

Hypotheses

The following are the hypotheses of the study:

1. **H₁:** Financial hardships increase the severity and duration of postpartum depression in mothers.

2. **H₂:** Mothers from different economic backgrounds manage postpartum depression in diverse ways.
3. **H₃:** There is no significant association between financial hardships and severity of postpartum depression in Pakistani women

The Rationale of the Study

This study is grounded in the necessity to dissect these intersecting challenges to unveil the unique experiences of mothers grappling with both PPD and financial strain. Understanding this intersection is crucial for several reasons: it highlights areas where healthcare systems and societal support structures may be falling short, it identifies specific stressors that can aggravate PPD, and it underscores the need for targeted interventions. By focusing on this specific group, the study seeks to contribute valuable insights that could inform more effective mental health support strategies, policies for financial assistance tailored to new mothers, and a broader awareness of the complexities faced by mothers in the postpartum period.

Research Design

This research has a quantitative, descriptive, correlational research design. Its goal is to learn more about postpartum depression in women and how it connects to financial hardship.

Population of the Study

The female population from different hospitals in three major cities of Pakistan (Peshawar, Islamabad, and Lahore) was the target population of the study.

Sample Participants

The size of the chosen sample depends on several factors including the research topic, characteristics of respondents, research objectives, and the accessibility of participants as well as the research design (Davies et al., 2008). Previous studies suggest that collecting data from 5% of a sample ranging from 30 to 500 participants is generally sufficient to draw meaningful conclusions (Roscoe's, 1975).

Based on these studies, more than 150 females were requested to fill out the questionnaires via online and face-to-face meetings but received 103 complete responses, so the retrieving rate was 68.7%. The ages of the participants were 18–45 age brackets. The participants' educational backgrounds ranged from metric to graduate. With their prior consent and the cooperation of their spouses, data collection took place during their free time.

Sampling Technique

The sampling technique used was purposive sampling because the target populations were females with one or more children.

Research Tools

Demographic information sheet

A personal demographic information sheet was used to gather the information of participants including their identity number, Age, gender, education, number of children, date of birth of child/ children etc.

Edinburgh postnatal Depression scale (EPDS) (J.L., Holden, J.M., and Sagovsky, R. 1987).

The Edinburgh postnatal depression scale (EPDS) version comprises 10 short statements, which is designed to measure the effects of PPD on women. The internal consistency of the EPDS was at a level of 0.83.

Economic Hardship Questionnaire (Lasley, 1984)

The Economic Hardship Questionnaire (EHQ) assesses economic hardship over the past six months through 12 questions with response options ranging from "never" to "very often." Its validity relies on correlations with related constructs, while reliability is gauged through measures like test-retest reliability and internal consistency. Normative data aids in score interpretation and sensitivity to change ensures its responsiveness to shifts in economic circumstances; therefore, the EHQ is a practical tool.

Statistical Packages for Social Sciences

Statistical analysis using the latest SPSS 25 was applied for calculation.

The Procedure of the Study

The participants were provided with a brief explanation about the topic of the study along with the consent form before filling out the questionnaire. Those who consent to participate were given the questionnaire to complete and were given the opportunity to seek clarification or any questions they may had. The questionnaires were distributed and collected after completion from participants. The target sample was in the age range of 18-45 years.

Ethical Considerations

The ethical issues were given primacy over everything in the current study due to the sensitivity of issue. Ethical principles honesty, anonymity, and confidentiality were fully ensured by the authors.

Informed Consent

Before collection of data the purpose of the study was explained to the respondents and was asked about their willingness to participate in study. All the participants were also informed that their responses will be kept confidential.

Results

Descriptive Statistics

Table 1

Descriptive Statistics

Predictor	N	Minimum	Maximum	Mean	Std. Deviation
Financial Hardships	103	1.00	7.00	5.9816	.59717
Postpartum Depression in Maternal Health	103	1.00	7.00	5.9400	.64892
Valid N (listwise)	103				

The above table presents the descriptive statistics of the study.

Variables

Financial Hardships: This refers to a variable related to financial difficulties or challenges experienced by the subjects of the study.

Postpartum Depression in Maternal Health: This variable relates to the level of postpartum depression among maternal health subjects.

N (Sample Size)

Both variables have a sample size of 103, meaning data was collected from 103 individuals for each variable.

Minimum and Maximum

For both variables, 1.00 is the minimum observed value, and 7.00 is the maximum observed value. This indicates the range of responses or scores recorded for each variable.

Mean

Financial Hardships: The mean score for financial hardships is 5.9816. This suggests that, on average, the level of financial hardships reported by the sample is close to 6 (since the scale ranges from 1 to 7).

Postpartum Depression in Maternal Health: The mean score for postpartum depression in maternal health is 5.9400. On average, the level of postpartum depression reported by the sample is nearly 5.94.

Standard Deviation

Financial Hardships: The standard deviation is 0.59717. This indicates the amount of variation or dispersion among the responses for financial hardships. A lower standard deviation suggests that responses are clustered closely around the mean.

Postpartum Depression in Maternal Health: The standard deviation is 0.64892. Similarly, this reflects the variability in responses to postpartum depression in maternal health.

Valid N (List-wise)

This row indicates that there were no missing values (list-wise deletion was used), so all 103 cases were included in the analysis for both variables.

Interpretation

The average level of financial hardships reported by the sample is slightly higher than the average level of postpartum depression in maternal health. Both variables have a similar range of scores from 1 to 7.

The variability (standard deviation) in scores is relatively low for both variables, suggesting that responses are somewhat consistent around the mean.

Overall, these statistics provide a snapshot of the distribution and central tendency of responses for financial hardships and postpartum depression in maternal health among the sample population.

Reliability Analysis

Table 2

Reliability Analysis

Predictor	Cronbach Alpha Value
Financial Hardships	0.897
Postpartum Depression in Maternal Health	0.921

The above Table presents the reliability analysis of the data set. In the table below values are greater than the threshold values i-e financial hardships are having value of 0.897 and the PPD in maternal health with value of 0.921.It indicates that the data is valid and can be processed for further analysis.

Table 3

Validity Analysis

Predictor		Factor Loadings	Valid (V)/Invalid (IV)
Financial Hardships	FH1	.624	V
	FH2	.786	V
	FH3	.866	V
	FH4	.727	V
	FH5	.737	V
	FH6	.717	V
	FH7	.753	V
	FH8	.736	V
	FH9	.730	V
	FH10	.758	V
	FH11	.770	V
	FH12	-.073	IV
Postpartum Depression in Maternal Health	PPDMH1	0.814	V
	PPDMH2	0.812	V
	PPDMH3	0.679	V
	PPDMH4	0.671	V
	PPDMH5	0.673	V
	PPDMH6	0.788	V
	PPDMH7	0.708	V
	PPDMH8	0.706	V

PPDMH9	0.679	V
PPDMH10	0.685	V

V for valid and IV for invalid

The table given above shows the validity of the data set. Here author adopted the factor loadings technique to analyze the validity of the data. In the table below, it can be seen that the values of the first 11 questionnaire items for FH (financial hardships) are greater than 0.6, which indicates that these items are valid, while the last item has having value of less than 0.6, which shows the invalidity of the data set. For the dependent variables, PPD in MH(maternal health) has factor loadings greater than 0.6, which shows every questionnaire item of that particular variable is valid.

Correlation Analysis

Table 4
Correlation Analysis

		Age	Profession	Education	Financial Hardships	Postpartum Depression in Maternal Health
Age	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	103				
Profession	Pearson Correlation	.093	1			
	Sig. (2-tailed)	.352				
	N	103	103			
Education	Pearson Correlation	-.183	-.160	1		
	Sig. (2-tailed)	.064	.107			
	N	103	103	103		
Financial Hardships	Pearson Correlation	-.115	.095	-.058	1	
	Sig. (2-tailed)	.248	.338	.561		
	N	103	103	103	103	
Postpartum Depression in Maternal Health	Pearson Correlation	-.112	.094	-.052	.896**	1
	Sig. (2-tailed)	.260	.344	.602	.000	
	N	103	103	103	103	103

**. Correlation is significant at the 0.01 level (2-tailed).

The table of correlation provides insights into the relationships between various factors—Age, profession, education, financial hardships, and postpartum depression (PPD) in maternal health—based on data from 103 participants.

Age shows a weak negative correlation with education (-0.183, p = 0.064) and financial hardships (-0.115, p = 0.248), indicating that older mothers tend to have lower educational attainment and slightly more financial difficulties, though these associations are not statistically significant at the conventional 0.05 level. Age also shows negligible correlations with profession (0.093, p = 0.352) and PPD (-0.112, p = 0.260).

Profession demonstrates a weak positive correlation with financial hardships (0.095, p = 0.338) and PPD (0.094, p = 0.344), suggesting that certain professions might be associated with higher financial hardship and possibly a slight increase in PPD risk, although again, these correlations are not significant.

Education shows a weak negative correlation with profession (-0.160, p = 0.107), indicating that higher education might be associated with certain types of professions. However, there is no significant correlation between education and either financial hardships (-0.058, p = 0.561) or PPD (-0.052, p = 0.602).

Financial hardships exhibit a strong positive correlation with PPD (0.896, p < 0.01), indicating that experiencing financial difficulties is significantly associated with higher levels of postpartum depression

among mothers in this study. This suggests that financial difficulties may be a critical factor influencing maternal mental health postpartum, aligning with previous findings that economic hardship can exacerbate mental health challenges during the perinatal period (Ayers, 2018; Johnson et al., 2020).

Variance Inflation Test

Table 5

Variance Inflation Test

Predictor	VIF Value
Age	1.058
Profession	1.040
Education	1.062
Financial Hardships	1.030

The above table shows the multi-collinearity of the data set based on the variance inflation test. This table shows that if there is a higher correlation between independent and dependent variables, then this is because of the similar nature of the questionnaire items adopted for data collection.

Regression Analysis

Table 6

Regression Analysis

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.103	.276		4.004	.000
Age	-.018	.078	-.010	-.225	.823
Profession	.012	.056	.010	.216	.830
Education	-.001	.068	-.001	-.013	.990
Financial Hardships	.823	.042	.894	19.639	.000

Dependent Variable: Postpartum depression in maternal health

Constant (Intercept)

- The constant term (1.103) represents the estimated value of the dependent variable (Postpartum depression in maternal health) when all independent variables (Age, Profession, Education, and Financial Hardships) are zero.
- The standard error (Std. Error) of the constant (0.276) indicates the precision of the estimate.
- The t-value (4.004) is the ratio of the estimated coefficient to its standard error. A higher t-value suggests that the constant is significantly different from zero.
- The significance level (Sig.), represented by p-value (0.000), and indicates that the intercept term is statistically significant at the 0.05 level, meaning it's highly unlikely to have occurred by chance.

Age

- The coefficient for Age (-0.018) indicates the change in the dependent variable (Postpartum depression in maternal health) for a one-unit change in Age, holding all other variables constant.
- The standard error (0.078) shows the precision of this coefficient estimate.
- The Beta value (-0.010) is the standardized coefficient, which is less relevant here since we are focusing on un-standardized coefficients.
- The t-value (-0.225) and the p-value (0.823) suggest that Age is not a statistically significant predictor of Postpartum depression in maternal health at the 0.05 level. In other words, changes in Age are not reliably associated with changes in Postpartum depression in maternal health in this model.

Profession

- The coefficient for Profession (0.012) indicates the change in the dependent variable (Postpartum depression in maternal health) for a one-unit change in Profession, holding all other variables constant.
- The standard error (0.056) indicates the precision of this coefficient estimate.
- The t-value (0.216) and the p-value (0.830) indicate that Profession is not a statistically significant predictor of Postpartum depression in maternal health at the 0.05 level. Changes in Profession are not reliably associated with changes in postpartum depression in maternal health in this model.

Education

- The coefficient for Education (-0.001) indicates the change in the dependent variable (Postpartum depression in maternal health) for a one-unit change in Education, holding all other variables constant.
- The standard error (0.068) shows the precision of this coefficient estimate.
- The t-value (-0.013) and the p-value (0.990) indicate that Education is not a statistically significant predictor of Postpartum depression in maternal health at the 0.05 level. Changes in Education are not reliably associated with changes in postpartum depression in maternal health in this model.

Financial Hardships

- The coefficient for Financial Hardships (0.823) indicates the change in the dependent variable (Postpartum depression in maternal health) for a one-unit change in Financial Hardships, holding all other variables constant.
- The standard error (0.042) shows the precision of this coefficient estimate.
- The t-value (19.639) and the p-value (0.000) indicate that Financial hardship is a highly statistically significant predictor of postpartum depression in maternal health at the 0.05 level. Changes in Financial Hardships are strongly associated with changes in postpartum depression in maternal health in this model.

Thus, based on this regression analysis:

- Age, Profession, and Education are not significant predictors of postpartum depression in maternal health, as indicated by their non-significant p-values.
- Financial Hardships, however, show a strong and statistically significant relationship with postpartum depression in maternal health, suggesting that higher levels of financial difficulties are associated with higher levels of postpartum depression among mothers.

Hypotheses Testing

Table 7

Hypothesis Testing

Hs	Supported	Supported/Not Supported
H ₁	Financial hardships increase the severity and prolong the duration of postpartum depression symptoms in mothers.	Supported
H ₂	Mothers from different economic backgrounds manage postpartum depression in diverse ways.	Supported
H ₃	There is no significant association between financial hardships and the severity of postpartum depression in women.	Not Supported

The above table shows the final summary of the hypothesis testing. To investigate the relationship between financial hardships and postpartum depression in maternal health, regression analysis is adopted by the author, and based on the standardized coefficient beta and significance value, it is concluded that there is a positive and significant relationship between financial hardships and postpartum depression in maternal health.

Discussion

This chapter contains three sections:

- Theoretical implication and practical significance of the study;
- The limitations associated with this research study;
- The conclusions are based on the statistical results.

Theoretical Implications

The theoretical implications of investigating the relationship between financial hardships and postpartum depression in maternal health are multifaceted and significant across several domains. Firstly, understanding this relationship can contribute to the broader field of maternal health by highlighting socioeconomic factors as critical determinants of mental health outcomes during the postpartum period. This research could underscore the importance of addressing financial stressors as part of comprehensive maternal healthcare strategies, potentially leading to the development of targeted interventions aimed at alleviating financial burdens among new mothers. Moreover, from a theoretical perspective, this study may enrich existing models of postpartum depression by integrating socio-economic variables into frameworks that traditionally focus on psychological, biological, and social factors. It could also stimulate further research into the mechanisms through which financial hardships impact maternal mental health, fostering a deeper understanding of the complex interplay between economic status, stress, and mental wellbeing during the vulnerable postpartum period. Overall, by elucidating the link between financial hardships and postpartum depression, this research has the potential to inform policy and clinical practices aimed at improving maternal mental health outcomes globally.

Practical Significance

Healthcare providers and policymakers could use the findings to develop targeted support programs and interventions aimed at reducing financial stressors for new mothers. These initiatives might include financial counselling, access to affordable healthcare services, and employment support tailored to postpartum women. By addressing financial hardships, healthcare providers can potentially mitigate the risk of postpartum depression and improve overall maternal mental health outcomes. Furthermore, employers and workplace policies could be influenced to accommodate the needs of new mothers, such as flexible work arrangements or extended parental leave, recognizing the impact of financial stability on maternal wellbeing. From a community perspective, raising awareness about the link between financial hardships and postpartum depression could foster support networks and community-based resources that provide practical assistance and emotional support to affected mothers. Ultimately, integrating these practical implications into healthcare systems and societal structures has the potential to enhance maternal health and wellbeing by addressing economic challenges effectively.

Limitations of the Study

- i. Along with implications, this study also possesses some limitations. Firstly, the region-specific study is based on Pakistan, so the output of this study is more effectively applicable to Pakistan.
- ii. Secondly, this study is based on the 103 responses, which makes the conclusion more limited.

Conclusion

1. This study underscores the significant relationship between financial hardships and postpartum depression among mothers, drawing on data from 103 respondents.
2. The findings highlight the critical impact of economic stressors on maternal mental health outcomes, emphasizing the need for targeted interventions and support mechanisms to alleviate financial burdens during the postpartum period.
3. These results contribute to a deeper understanding of the complex interplay between socioeconomic factors and mental health, advocating for integrated approaches within healthcare policies and practices to improve maternal wellbeing.
4. Moving forward, continued research and implementation of evidence-based strategies are essential to effectively address and mitigate the adverse effects of financial hardships on maternal mental health.

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