ORIGINAL ARTICLE

MEDIATING ROLE OF POSTPARTUM DEPRESSION BETWEEN PERCEIVED SPOUSAL SUPPORT AND POSTPARTUM MATERNAL BONDING

Adnan Adil, Rabia Shahbaz, Anam Khan, Sadaf Ameer
Department of Psychology, University of Sargodha-Pakistan

Background: The present study intended to examine the direct effects of perceived spousal support and postpartum depression on postpartum maternal bonding. Furthermore, it also explored the mediating role of postpartum depression between perceived spousal support and postpartum maternal bonding. **Methods:** This study was based on a cross-sectional survey research design. A purposive sample of 170 women who were already diagnosed by the doctor/psychiatrist as suffering from postpartum depression was recruited from different hospitals of Gujrat district. Urdu translated versions of The Marital Empathy Scale, Postpartum Bonding Questionnaire, and the Edinburgh Postnatal Depression Scale were used to measure the focal constructs of the study. **Results:** IBM Amos was used to test the proposed model of the present study. Path analysis revealed that perceived spousal support had negative significant direct effects on postpartum depression and postpartum maternal bonding. Postpartum depression had significant positive direct effect on postpartum maternal bonding. Finally, the significant indirect effect of perceived spousal support through postpartum depression on postpartum maternal bonding was negative. **Conclusion:** The mediation found in the present study suggested that perceived spousal support reduced the postpartum depression, which in turn, lowered the chances of dysfunctional postpartum maternal bonding with the baby. Implications of the study along with the recommendations for future studies have been reflected upon.

Keywords: Postpartum depression; Postpartum maternal bonding; Perceived spousal support

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INTRODUCTION

Postpartum depression (PPD) is a serious and complex mood disorder that affects not only the mental well-being of the mother, causing poor postpartum physical health[1] and bonding problems, but may also have negative effects on the infant including dysregulation patterns that make the infant prone to depression in the future[2]. According to Gulamani, Shaikh, and Chagani, the precise prevalence rate of PPD in Pakistan is difficult to estimate because Pakistani women tend to underreport PPD owing to indigenous cultural norms. Moreover, lack of psychometrically sound and indigenously valid screening tool may lead to underdiagnosis of this condition. Gulamani et al. observed that some indigenous studies revealed that the prevalence of PPD ranged from 28% to 63%, which is quite alarming. Furthermore, Pakistan has the highest prevalence rate of PPD in Asian countries.[3]

The course of PPD may be influenced by many values and norms indigenous to Pakistani culture. For instance, the postpartum tradition of '*chila*'—a 40-day period in which the new mother is supposed to take rest and is separated from all the routine activities such as cooking, cleaning, going for shopping because she is deemed to be '*najas*' or dirty.[4] This seclusion and the concept of being dirty may increase the vulnerability of new mothers to the PPD. Pakistani women may experience shyness in sharing their reproductive health issues with their husbands and they are afraid of being stigmatized as '*pagal'* had they developed symptoms of PPD or other psychiatric issues. For many Pakistani families, depression does not constitute a serious mental health issue. These dynamics lead to the underdiagnosis of PPD and in many cases, PPD goes without being reported.

The long-term effects of PPD in children includes the display of overanxious and depressed symptoms as well as behaviors related to defiance, aggression, and conduct problems.[5] Considering the limited evidence regarding the use of pharmacological interventions in the treatment of PPD and the concern of the possible effects on newborns, attention to the psychosocial factors associated with depression that would suggest efficacious psychosocial interventions seems warranted. Perceived spousal support seems to be a pertinent protective psychosocial factor against the development of postpartum depression and the resultant insecure and unhealthy maternal bonding with the baby. The present study empirically

explored the dynamics through which spousal support may mitigate the negative influence of PPD on insecure maternal bonding.

Spousal support is conceptualized as the subjective perception of the support a person may have from his/her spouse, and this is not necessarily a reflection of actual supportive behaviors of one's spouse. Spousal support may be conceived as a three-dimensional construct consisting of emotional support (concern, comfort, and encouragement); instrumental support (money, time, and tangible assistance); and informational support (where advice, education, and knowledge sharing takes place).[6]

The perception of spousal support is relatively stable over time and it is related to cognitive constructs such as dysfunctional beliefs and attribution style.[7] Lack of spousal support seems to increases the risk for postpartum depressive symptoms. For example, lack of confidence or absence of a person with whom to talk and an unsatisfactory marital relationship[8], marital difficulties[9] may increase the likelihood of post-partum depression. Spousal support can build the parenting competence[10], which may reduce the likelihood of postpartum depression.

Previous research has consistently shown negative relationship of the postpartum depression to instrumental and emotional support.[11] Support during the postpartum may enhance the maternal and newborn baby's wellbeing by helping women progress into parenthood.[12] Several indigenous studies in Pakistan have shown the protective role of spousal and family support in combating with the PPD.[13,14] Similarly, Husain *et al*, found that low spousal and family support might increase new mothers' vulnerability to PPD.[14] Marital dissatisfaction and conflicts with the husband have also been found as risk factors for the development of PPD in Pakistan.[15,16]

The development of post-partum depression and lack of spousal support are connected.[15,17] Numerous investigations have discovered that expanded levels of help bring down PPD scores.[18,19] To prevent the occurrence of depression in mothers, accepting social support from husbands and other relatives during unpleasant circumstances could be valuable[20] and numerous past investigations have consistently shown that social support can be useful in lessening the indications of postpartum depression[21,22]. There is clear indication that PPD negatively affects the interaction style of parents with their children, such as the demonstration of more anger and irritation, and less interest toward their baby.[23] The solid spousal relationship is a key amid the pre-birth period; in this way, it is not surprising that a stable bond may support a mother's adequacy by giving acknowledgment that she is performing well in her maternal role[24], which lead to secure and healthy maternal bonding with the baby.

The connection between newborn baby and the mother has been depicted as a key relationship and it is associated with a complex set of individual, social, and environmental elements shaping the developmental results.[25,26] The nature of emotional bonding between a baby-mother, and the feeling of security given by these kinds of bonding could be extremely helpful for the newborn child's mental portrayal of self and others.[27] In the postpartum depression, the maternal connection between the infant–mother and the advancement of infant–maternal synchrony is likely to be severely disturbed [28] that may lead to post-partum bonding. Post-partum bonding refers to a dysfunctional attachment between mother and her baby that is characterized by the lack of appropriate maternal emotional response to the baby.[11]

The mothers with the diagnosis of postpartum depression (PPD) are likely to have bonding issue with the newborn child.[29] As indicated by the discoveries of Moehler, Brunner, Wiebel, Reck, and Resch, in women with post-partum depression at two weeks, a month and a half, and four months, the nature and quality of bonding between a mother and her baby is severely impaired.[30] Numerous research studies have validated the hypothesis that the poor mother-infant bonding is one of the major determinants of post-partum depression.[31,32]

Depressed mothers are less inclined to the activities related to motherhood and are less loving. Research findings portray that less frequent interaction between depressed moms and their newborn child ended up with increased level of depression, furthermore the depressed moms have less face-to-face positive communication with their child and lack the capacity of nourishing in the first half year of postpartum.[33] The babies of depressed mothers will come to learn that they should not seek protection from their mothers because the depressed mothers are most of the time inaccessible, eccentric, less inclined or dismissing, owing to which the children are likely to develop unhealthy bonding.[34] Various research studies have found that mothers with PPD have high rates of negative and less cheerful relationships with their children as compared to non-depressed mothers.[35,36]

In consonance with the aforementioned literature, the present study has formulated the following hypotheses:

H_1: Perceived spousal support will negatively predict postpartum depression and insecure maternal bonding.

H_2: Postpartum depression will positively predict insecure maternal bonding.

H_3: Postpartum depression will mediate between perceived spousal support and insecure maternal bonding.

MATERIAL AND METHODS

The present study employed a cross-sectional survey research design and the focal variables of the study were measured through psychometrically sound measures in Urdu language. The methodological details are as follows:

A purposive sample of women (N=170) was recruited in the present study. Sample was collected from different governments and private hospitals of district Gujarat (Pakistan). As per the inclusion criteria of the sample of the present, women with the following characteristics were eligible to participate in this study:

1. All mothers in the age range of 18–45 years who were diagnosed by the doctors/psychiatrists as suffering from the post-partum depression
2. The temporal gap between data collection and delivery of the last child must range one week to six months.
3. The minimum educational qualification of the participants must be at least middle school so that they could read and understand the Urdu scales used in the present study.
4. The last-born child of the participants must be alive.

As per the exclusion criteria of the present study, the women who were not referred by doctors, were under the age of 18 or above 42 years, the women who were illiterate, and the women whose last child had died were excluded from the sampling frame of the present study. Mothers with other comorbid psychological disorders were also excluded from the sample. The data were collected from December 2017 to May 2018.

The instruments used to measure the focal variables of the present study were translated into the Urdu language by following the standard backward translation procedure. This process comprised four phases. In the first phase of forward translation, the English instruments were independently translated into the Urdu language by three faculty members of Department of Psychology, University of Sargodha. The second step of translation procedure was reconciliation of items for which a meeting of the committee was arranged to consensually decide the best translated items from the three forward translations. Each item was critically examined by the experts (four faculty members of Department of Psychology, University of Sargodha) with reference to grammar, words, suitability in Pakistani indigenous cultural context, and face validity and they selected the translation, which served the best meaning of each item of scales in our aboriginal context. In the end, one synthesized Urdu version of all instruments was compiled after discussion between the experts. The third phase of translation process was the back translation of the finalized Urdu version into English as a check on original translation and to detect the points of equivalence or difference between the two versions. The instruments were translated back into English by independent bilingual experts using the same approach applied in first step of translation. Finally, a committee of senior faculty members of Department of Psychology, University of Sargodha scrutinized the original instruments, their translated version, and the back-translated version and concluded that the back translations were very close to the original English versions of the scales and all the translations were culturally appropriate and relevant to our indigenous setting. This provided an evidence for the equivalence of the instruments in the source (English) and the target (Urdu) languages and the suitability of their usage in Pakistani society. The details of these instruments are as follows:

The 9-item Edinburgh Postnatal Depression Scale[37] was used to measure the postpartum depression. This scale indicated that how the mother felt during the previous week (7 days). The scale did not detect the mothers with anxiety neuroses, phobias, or personality disorders. The EPDS was measured on a 5-point Likert-type scale that ranged from 1 (never) to 5 (Always) and only item no. 1 was reverse scored. The authors reported satisfactory level of internal consistency for this scale (Cronbach's α 0.77) and the potential range of this scale was 9–45.

12-item Marital Empathy Scale[38] was used to measure spousal solidarity or perceived support from the partner. This scale combines six "spouse/partner support" items and six "spouse/partner strain" items. After reversing the items of spouse strain, the arithmetic average of the 12 items provides an index of spouse solidarity. High scores show high levels of spousal support and vice versa. The authors

reported satisfactory level of internal consistency for this scale (Cronbach's alpha for spouse support = .86, Cronbach's alpha for spouse strain = .81, and Cronbach's alpha for Spousal Support = .92.) The potential range of this scale is 1–5.

Postpartum Bonding Questionnaire PBQ[39] is a 25-item questionnaire. The high scores on this scale show high tendency for developing the post-partum bonding. This scale was based on 6- point Likert scale anchored by 6 (never) to 1 (Always) and item nos. 2, 3, 5, 6, 7, 10, 12, 13, 14,15, 17, 18, 19, 20, 21, 23, and 24 (17) were reverse coded. The authors' reported value of Cronbach's alpha for the scale was 0.84. The potential range of this scale is 25–150.

First of all, the research protocol of the present study was approved from the Research Ethics Committee of the Department of Psychology, University of Sargodha and all ethical codes of the America Psychological Association (APA) were strictly followed throughout the study. With the formal permission from the authorities of governments and private hospitals of district Gujarat (Pakistan), the medical histories of the potential participants were examined and only those participants were personally contacted who met the inclusion criteria of the present study. They were instructed about the research purpose and were provided guidelines about response format and completion of questionnaires. Personal information essential for research purpose were gained through the demographic form which included age, residence, last gender of child, and child's date of birth. The average time to complete the questionnaire was approximately 30 minutes. Questionnaires were handed over to participants along with verbal and written instructions. The privacy and confidentiality of the participants were guaranteed and they were requested to respond honestly. The filled questionnaires were collected personally. After collecting all the questionnaires, participants of the study were acknowledged for their assistance and collaboration in the study. 220 copies of questionnaires were distributed among women from whom 193 copies were received back. 23 questionnaires were discarded due to incomplete and inadequate information. The data were subjected to statistical analyses; descriptive statistics and psychometric properties of the scales were computed through using IBM SPSS and hypotheses of the present study were tested through IBM Amos.

RESULTS

The demographic characteristics of the participants of the present study are reported in Table 1.

The average age of the participants was 29.81 years with a standard deviation of 5.66 years. The average family income of the participants was Rs. 39294.12 with a standard deviation of Rs. 22837.13.

Descriptive statistics, alpha coefficients of reliability, and inter-scale correlations are presented in Table 2. All instruments demonstrated commendable degree of internal consistency and the focal variables were significantly related to one another in the expected directions. Furthermore, the skewness values suggest that all variables were symmetrically distributed.

The mediational model of the present study was tested through path analysis by using IBM Amos. The model demonstrated excellent fit to the data (χ^2 = 3.01, df = 2, p = .22; CFI = .99; GFI = .99; RMSEA = .05, p_{close} = .36; Standardized RMR = .05). The path diagram is depicted in Figure-1. The bold arrows show significant paths, values of standardized path coefficients are given along the paths, and the values of the explained variance in the outcome variables, i.e., R^2 are presented along the corners of the rectangles.

The standardized path coefficients of the direct and the indirect effects are presented in Table-3 along with 95% bias corrected confidence intervals. Age was taken as a control variable; however, it did not predict postpartum depression. Suppose support demonstrated significant negative direct effects on both postpartum depression and bonding. Postpartum depression has significant positive direct effect on postpartum bonding. Finally, spouse support has significant negative indirect effect on postpartum bonding through postpartum depression, which suggested that increase in spouse solidarity decreases the postpartum depression, which in turn reduces the degree of postpartum bonding.

Table-2: Descriptive Statistics and Alpha Reliability Coefficient of the Scales (N=170)

Variables			Range							
	M	*SD*	Actual	Potential	*Sk*[a]	α	1	2	3	4
1. Spousal Support	2.69	.81	1.00-4.58	1-5	-.33	.82	-	-.68*	-.36*	-.11
2. Postpartum depression	31.89	5.53	15-45	9-45	0.2	.76	-	-	37*	.12
3. Postpartum Bonding	79.57	17.37	33-118	25-150	-.44	.92	-	-	-	.03
4. Age	29.81	5.66	19-42	18-45	.35					

[a] Standard error of skewness = .14. *p< .001

Table-3: Standardized Direct and Indirect Effects Through Maximum Likelihood with 95% Bias Corrected Bootstrapped Confidence Intervals in Amos (N=170)

Paths	β	95% CI	
		LL	UL
Age →Postpartum Depression	-.01	-.17	.10
Spouse Support → Postpartum Depression	-.36**	-.53	-.24
Postpartum Depression→ Postpartum Bonding	.15*	.01	.27
Spouse Support →Postpartum Bonding	-.63*	-.73	-.52
Spouse Support →Postpartum Depression →Postpartum Bonding	-.05*	-.10	-.01

*$p < .05$; **$p < .01$.

Table-1: Demographic Characteristics of the Participants of the Present Study (N=170)

Characteristics	*f* (%)
Education	
Up to intermediate	40 (23.5)
Bachelors	73 (42.9)
Masters	57 (33.5)
Residential Background	
Urban	69 (40.6)
Rural	101 (59.4)
Mode of Delivery	
Normal	102 (60.0)
C-section	68 (40.0)
Marriage Type	
Love	49 (28.7)
Arrange	121 (71.3)
Family System	
Joint	122 (71.2)
Nuclear	48 (28.8)
Gender of the Child Born	
Boy	62 (36.5)
Girl	108 (63.5)

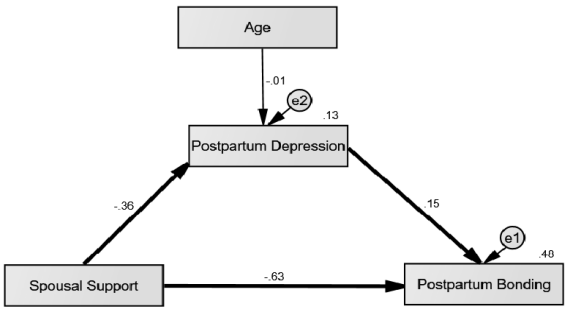

Figure-1: Path diagram of the model of the present study

DISCUSSION

The first hypothesis of the study was that spouse support would be negatively associated with post-partum depression. Results revealed that spouse solidarity was indeed negatively related to postpartum depression, which provided empirical support for this hypothesis. Previous research has consistently shown negative relationship of the postpartum depression to instrumental and emotional support.[11,13] For instance, spousal support turned out to be the negative predictor of postnatal depression in mothers from Karachi.[14] Furthermore, research has also demonstrated that absence or lack of social support is one of the important risk factors for the PPD among pregnant and postpartum women.

Literature also supports our finding that suggested positive relationship between postpartum maternal bonding and PPD (our second hypothesis). Approximately, 29% of the mothers with the diagnosis of postpartum depression (PPD) had bonding issues with the newborn child.[31] Moehler, Brunner, Wiebel, Reck, and Resch's study indicated that the nature of mother-infant bonding was severely compromised in case of mothers suffering from PPD.[29] Numerous other research studies pointed to the same direction that poor mother-infant attachment was an important correlate of PPD.[41]

Our results supported third hypothesis of the current study, which suggested that post-partum depression would mediate between spouse support and postpartum bonding. Mothers who experienced their husbands' support and empathy had lowered chances of developing depressive symptoms, which in turn, precluded the development of negative postpartum bonding with their babies. These findings are in line with the pertinent literature as various research studies support that mothers suffering from PPD have higher chances of having harsh, hostile, and unfriendly relationship with their children as compared to their non-depressed counterparts.[42] In a cluster-randomized controlled trial study of mothers from rural areas of Pakistan, it was found that moms with PPD have less cheerful relationship with infants and this might be related to a high amount of maternal depression.[43]

CONCLUSION

Overall, the findings of the present study have provided empirical support for the purpose structural model and all the hypotheses were supported, which delineated that psychosocial factors play important role in the developmental course of postpartum depression. Specifically, we found that postpartum depression turned out to be significant risk factor for developing a negative bonding with the child whereas perceived support from the husband appeared to be a salient protective factor in relation to postpartum bonding and depression.

Limitations of the Study

There are some limitations of the present study that should be kept in mind when considering the results.

Firstly, the present study was conducted on a sample of 170 women with postpartum depression, however, considering the clinical population of the

present study, the sample size was sufficient for the statistical analyses and inferences. Secondly, all the participants of the present study belonged to a single district of the Punjab province i.e., Gujrat, owing to which the external validity of the findings might have been somewhat compromised. However, very low values of standard error of path coefficients suggest that our findings are quite reliable and have the potential of generalization. Thirdly, the present study might have showed common method variance due to the use of self-report measures, which might have inflated the relationship among variables of the present research; however, the inspection of correlation matrix revealed that none of the correlations was aberrantly high. Fourthly, the present study doesn't account for cause-and-effect relationships among variables because it was cross-sectional in nature; however, the hypothesized directions of effects are supported by the pertinent literature. Fifthly, the participants of the present study were already diagnosed patients of PPD and the researcher did not screen them out for other potential comorbid psychological disorders. Finally, owing to the quantitative nature of the present study, detailed case histories of the patient could not be consulted, which could have been source of detailed and enriched information.

Recommendations and Implication

Future research should be conducted on larger samples; a national sample should be recruited so that more varied and enriched data should have been collected yielding better generalization prospects for the Pakistani population. Moreover, future research may employ multi method approach to overcome common method bias. For estimating the causal effects of hypothesized predictors of the postpartum depression, longitudinal designs should be used in further research. Studies in future should use some screening device in order to ensure that participants with only PPD could have been recruited so that participants with other mental health conditions may not confound the results.

The findings of the present study suggested some salient implications. The distrust and lack of support from the family members and especially husband is one of the majors maintaining factors of mental health issues 5; along these lines, a common objective could be created where the entire family could be engaged in exercises aimed at enhancing wellbeing. It will give a chance to moms to enjoy the support from their families and husbands for ameliorating the debilitating effects of the PPD without any stigma or defamation. In their experimental study, Rahman, Malik, Sikander, Roberts, and Creed found that the cognitive-behavioral therapy-based interventions could be effective in buffering the aversive consequences of perinatal depression among pregnant mother in rural areas of Pakistan. These interventions were delivered through trained lady health workers/visitors and were by no means costly to the recipients. The efficiency and cost-effectiveness of their intervention suggest that proper mental health care services could be provided at the door steps of the pregnant mothers, which may have the potential of improving mothers' psychological health resulting in better developmental outcomes for the children.

The findings of the present research have opened certain avenues for the potential interventions for the PPD. Our results suggested that enhancing perceived social support is the key element for any effective intervention for the treatment of PPD. Therefore, the major goals of therapeutic interventions for the PPD should be (i) enhancing mothers' self-efficacy and confidence in their capabilities as effective, loving, and caring mothers, and (ii) engagement of the whole family unit in the therapeutic process to improve the available family/spouse support in combating with the PPD.

AUTHORS' CONTRIBUTION

AA: Conceiving the idea, data analysis, manuscript writing. RS: Literature review, Data collection. AK: Compilation of reference list, formatting of the manuscript. SS: Proof-reading

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Address for Correspondence:

Adnan Adil, Department of Pathology, University of Sarghoda-Pakistan
Cell: +92 321 603 6747
Email: livespirit786@yahoo.com