

Short Report

Correlations between Postpartum Depression, Support, and Affection in Married Couples One Month after Childbirth

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Abstract

A questionnaire survey was conducted for 44 couples one month after childbirth. Results showed negative correlations with depression of the husband and wife and being able to receive support from the wife and being able to provide support to the husband, respectively. Multiple regression analysis indicated that a respondent's depression was significantly regulated by their partner's depression.

1. Introduction

Researchers in the field of perinatal mental health have long focused on the psychological symptoms of mothers after childbirth (e.g., Kitamura¹; Yoshida et al.²). Whilst the maternity blues is a transient physiological reaction³, postpartum depression (PPD) has relatively severe and long lasting symptoms. A review by O'hara and McCabe⁴ reported that estimates of PPD prevalence range from 13 to 19 percent. Similarly in Japan, the incidence rate ranges from 10 to 20 percent, and in most cases the disease onset is found in the first 2 months after childbirth⁵.

Recent studies indicate that not only postpartum mothers but also husbands who are fathers display depression symptoms^{6, 7}. A review by Takehara and Suto⁸ reported that the incidence rate of postpartum depression is slightly lower among fathers (husbands) compared to mothers (wives) but both rates were between 10 to 20% in Japan. Traditionally, the role of fathers used to be the “breadwinner” of the family in Japanese society⁹. Recently, expectations for fathers to take part in child rearing have risen with ongoing discussions on the role of fathers as supporters and childrearsers¹⁰. Despite these trends, fathers taking on a new parenting role in addition to work and family are likely to suffer from mental conflicts that may bring adverse effects on their mental health¹¹.

The latest review by Yim et al.¹² identified many biological and psychosocial predictors of PPD. In particular, social support is included in the latter and is considered as an important buffer factor. According to research findings in Japan that specified support sources (support providers), support from the husband is utmost important for mothers in the postpartum period¹³. In the review by Yim et al.¹² on studies after 2000, support from the partner is considered as one of the strongest predictors.

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However, social support is not static as interpersonal interactions. One person does not always provide support or the other person does not always receive support, but both persons become providers and receivers. The wife receives support from her husband and also provides support to him or vice versa. Additionally, support provisions sometimes bring benefits to providers themselves¹⁴⁾. In the context of PPD, no studies from this viewpoint have previously been conducted.

Meanwhile, there are some reports indicating that depressive symptoms during the postpartum period correlate with marital intimacy (affection). It has been pointed out that the relationship quality with the partner affects PPD¹²⁾ and Iwafuji and Muto¹⁵⁾ examined the correlation between marital intimacy and depression during pregnancy, six months after childbirth, and one year after childbirth. They reported that depression in wives during pregnancy decreased the intimacy they felt for their husband after childbirth and that this decline further decreased the intimacy husbands felt for their wives, consequently increasing depression in both the wife and husband. However, their study did not include the first two-month period after childbirth, which is regarded to have higher PPD incidence.

With awareness for the above problems in the background, we conducted a questionnaire survey targeted at wives and husbands at the one-month point of time after childbirth when PPD is more likely to emerge. Specifically, we aimed to delve into correlations between depression in the wives and husbands as a dependent variable, affection for their partner (spouse), and support received from and provided to the partner.

2. Methods

2.1 Participants

Participants consisted of wives who attended a one-month postpartum checkup at Clinic A obstetrics and gynecology and their husbands. We received responses from 64 wives and 51 husbands out of the couples who accepted to participate in the survey. Among these responses, the complete pair data of 44 couples was obtained containing both responses from the wife and husband without any omissions. The basic attributes of participants are shown in Table 1.

Table 1 Basic attributes of respondents

Attribute	Category	Value
Average age of respondents (Inside the brackets are SD)	Husband	34.11 yrs. old (5.28)
	Wife	32.02 yrs. old (4.23)
Number of children	1 (primiparity)	19 persons (43.2%)
	2 or more (parity)	25 persons (56.8%)
Status of living with parent(s) (Based on husbands' responses)	Husband's parent(s)	9 persons (20.5%)
	Wife's parent(s)	3 persons (6.8%)
	Do not live with parent(s)	32 persons (72.7%)

2.2 Materials

Separate questionnaires were created for wives and husbands and the following contents were printed on 2 pages of A4-size paper (1 double-sided sheet). Taking into account the burden of answering questions, we designed questionnaires with a reduced number of items with the exception of the standard depression scale items.

2.2.1 Depressive symptoms

Similar to the previous study conducted on postpartum couples by Iwafuji and Muto¹⁵⁾, this study used the Japanese version¹⁶⁾ of the Center for Epidemiologic Studies Depression Scale (CES-D)¹⁷⁾. Using the four-point scale consisting of 20 items, we asked respondents to choose one from the following that applied to

their physical or mental conditions: 1 (Rarely or none of the time: less than 1 day), 2 (Some or a little of the time: 1-2 days), 3 (Occasionally or a moderate amount of time: 3-4 days), and 4 (Most or all of the time: 5-7 days). Examples of the items were “I was bothered by things that usually don’t bother me”, “I did not feel like eating, my appetite was poor”, and “I felt that I could not shake off the blues even with help from my family”. Shima et al.¹⁶⁾ suggested that a score of 16 is appropriate as a cut-off point as advocated by Radloff¹⁷⁾.

2.2.2 Social support

The questionnaire included partially revised items from Kobayashi¹⁸⁾, which measured support mothers with three- to four-month-old infants received from their husbands. The questionnaire consisted of five items each for support the husband and wife received from their partner (support receipt) and support they provided to their partner (support provision). We asked respondents to rate how much each item applied to them on a six-point scale: 1 (Never), 2 (Very rarely), 3 (Rarely), 4 (Occasionally), 5 (Frequently), and 6 (Very frequently). Contents of the items used in this study are shown in Table 2.

2.2.3 Affection

The questionnaire included 6 items to measure affection to their partner. These items were extracted from the marital intimacy scale developed by Sugawara and Takuma¹⁹⁾ consisting of 19 items. Similar to the original version, we asked respondents to rate each item on a four-point scale: 1 (Strongly disagree), 2 (Slightly agree), 3 (Moderately agree), and 4 (Strongly agree). We set the number of items the same as the analysis by Iwafuji and Muto¹⁵⁾ in order to reduce the burden of completing the questionnaire. We used the 6 highest factor loading items in Sugawara and Takuma¹⁹⁾ in consideration of the appropriateness of their contents for respondents in this study and the internal consistency as a scale, although the contents of the items were partly different from Iwafuji and Muto¹⁵⁾.

2.2.4 Demographic variables

We asked respondents about their age, the number of children, and whether or not they were living with their parents (to be selected from: We live with my parent(s); We live with my wife’s (husband’s) parent(s); and We do not live with parent(s)). Also, we assessed the status of primiparity or parity based on their response on the number of children.

2.3 Procedures

A set of questionnaires in an envelope was distributed to mothers who came in for a one-month postpartum checkup at Clinic A obstetrics and gynecology. The envelope contained the following: a written request, separate questionnaires and separate reply envelopes for the wife and the husband, and writing utensils for filling out the questionnaire, which was given away as a reward. We instructed participants to take home the envelope and the wife and the husband to independently fill out the separate questionnaire, put it in a separate return envelope, and return their response within a week. A doctor who conducted the checkup requested mothers for their cooperation in this survey. The survey was conducted anonymously by using numbers for confirmation of correct pairs of couples after collection. The questionnaires were distributed between the end of August to the beginning of November 2011 and we considered responses received by November 14 as valid.

2.4 Ethical considerations

The plan and contents of this survey were first confirmed by a professor of midwifery who is also a trainer in obstetrics and gynecology. Then, the professor introduced a clinic to us. After obtaining permission from the person in charge at the clinic, we conducted this survey. Permission for cooperation was obtained from participants by proving both written and verbal explanations of the purpose of the

Table 2 Contents of items of support provision and receipt and affection

Support provision
My partner helps me when I am busy
My partner gives me various useful information
My partner cheers me up when I am feeling down
My partner listens to my anxiety and problems
My partner pays attention and cares for me
Support receipt
I help my wife (husband) when she(he) is busy
I give my wife (husband) various useful information
I cheer my wife (husband) up when she(he) is feeling down
I listen to my wife's (husband's) anxiety and problems
I pay attention and care for my wife (husband)
Affection for partner
When I am with my wife (husband), I realize that I truly love her (him)
I feel my wife (husband) is an attractive woman (man)
I think my wife is a good life partner
I want to stay on my wife's (husband's) side no matter what happens
It is painful to spend time without my wife (husband)
I always want to be aware of what my wife (husband) is thinking or feeling

survey and the following conditions: cooperation by choice, no loss for nonparticipation, and an anonymous survey, in which no individuals will be identified after collection of responses except for confirmation on the pairs^{†1)}.

3. Results

3.1 Descriptive statistics

Each scale of support receipt, support provision, and affection consisted of one factor. By using simple addition, we calculated the total scores for depression, receipt and provision of support, and affection. Table 3 shows the mean values and standard deviations of each scale and Cronbach's coefficient α as an internal consistency measure. As a result of a t-test, there were no significant differences between husbands and wives (all were $t < 1.20$, n.s.). However, as shown in Table 4, some scores had significant or marginally significant correlations with the husband's or wife's age (the correlation between the husband's age and wife's affection for him was $r = -.35$, $p < .05$; the correlation between the husband's and wife's age and affection they felt for each other was $r = -.28$ and $-.26$ respectively and $p < .10$ for both). In comparison between primiparity and parity, there were variables with marginally significant differences (affection the husband felt for his wife was $t(42) = 1.79$, support received by the wife was $t(42) = 2.01$, $p < .10$ for both, and primiparity > parity).

Of our respondents, 6 husbands (13.9%) and 7 wives (15.6%) had a score of 16 or higher, which is considered a cut-off point for depression in the CES-D. In addition to mean values of around 10 points, our results were mostly consistent with previous studies.

3.2 Correlations between social support, affection, and depression in husband and wife

Given that there were partial correlations confirmed between the scale scores and the respondent attributes (age of the husband and the wife and the status of primiparity or parity), we controlled these variables and separately calculated partial correlation coefficients for the wives' responses and the husbands' responses. As for the results shown in Table 5, depression in husbands had significant negative

Table 3 Descriptive statistics of scale scores

Scale	Husband			Wife		
	<i>a</i>	Mean	SD	<i>a</i>	Mean	SD
Depression	0.82	9.25	7.22	0.90	10.39	9.33
Support receipt from spouse	0.93	22.80	6.10	0.82	23.34	4.94
Support provision to spouse	0.89	21.09	4.66	0.84	20.77	4.45
Affection for spouse	0.94	19.95	4.38	0.93	19.11	4.73

Table 4 Comparison between primiparity and parity, and correlation with age of scale scores in husbands and wives

Response	Scale	Primiparity		Parity		t-value	Correlation with age	
		Mean	SD	Mean	SD		Husband	Wife
Husband	Depression	9.89	6.21	8.76	7.63	0.51	-.04	-.06
	Support receipt from spouse	24.16	5.91	21.76	6.01	1.30	-.08	-.22
	Support provision to spouse	20.53	4.20	21.52	5.26	0.70	-.13	-.20
	Affection for spouse	21.21	3.25	19.00	4.73	1.79+	-.28+	-.14
Wife	Depression	10.95	9.12	9.96	9.37	0.34	.23	.08
	Support receipt from spouse	25.00	4.96	22.08	4.78	2.01+	-.07	-.16
	Support provision to spouse	21.11	4.75	20.52	4.33	0.43	.02	.19
	Affection for spouse	20.11	3.83	18.36	5.13	1.22	-.34*	-.26+

+p<.10 *p<.05 **p<.01 ***p<.001

Table 5 Correlation between support, affection and depression in husbands

Scale	Depression	Support receipt	Support provision	Affection for wife
Depression	1.00			
Support receipt	-.35 *	1.00		
Support provision	-.23	.53 ***	1.00	
Affection for wife	-.38 *	.46 **	.38 *	1.00

Note: Partial correlation coefficient by controlling for the age of married couples and the status of primiparity/parity +p<.10 *p<.05 **p<.01 ***p<.001

Table 6 Correlation between support, affection and depression in wives

Scale	Depression	Support receipt	Support provision	Affection for husband
Depression	1.00			
Support receipt	-.03	1.00		
Support provision	-.40 **	.42 **	1.00	
Affection for husband	-.10	.71 ***	.29 +	1.00

Note: Partial correlation coefficient by controlling for the age of married couples and the status of primiparity/parity +p<.10 *p<.05 **p<.01 ***p<.001

correlations with support receipt in husbands (partial $r=-.35$, $p<.05$). And as the results shown in Table 6, depression in wives had significantly negative correlation with support provision in wives (partial $r=-.40$, $p<.01$). With regard to affection for the spouse, a significant correlation with depression was found only among husbands (partial $r=-.38$, $p<.05$), but it had significant and marginally significant positive correlations with support receipt and support provision among both wives (partial $r=.71$, $p<.001$ and partial $r=.29$, $p<.10$,

Table 7 Correlations between responses of husbands and wives

Wife	Husband	Depression of husband himself	Support receipt from wife	Support provision to wife	Affection for wife
Depression of wife herself		.52 ***	-.27 +	-.23	-.15
Support receipt from husband		-.19	.48 **	.54 ***	.45 **
Support provision to husband		-.42 **	.56 ***	.51 ***	.46 **
Affection for husband		-.11	.29 +	.41 **	.42 **

Note: Partial correlation coefficient by controlling for the age of married couples and the status of primiparity/parity
+p<.10 *p<.05 **p<.01 ***p<.001

Table 8 Multiple regression analysis with depression as a dependent variable

Response	Independent variable	Dependent variable	Husband's depression	Wife's depression
Own	Support receipt from spouse		-.06	.36
	Support provision to spouse		.07	-.25
	Affection for spouse		-.29	-.23
Partner	Spouse's depression		.47 **	.46 **
	Spouse's support receipt		-.15	-.09
	Spouse's support receipt		-.11	-.10
	Affection for spouse		.18	.17
	Multiple correlation coefficient (R)		.64 *	.65 *
	R ²		.41 *	.42 *
	Adjusted-R ²		.22 *	.24 *

*p<.05 **p<.01

respectively) and husbands (partial $r=.46$, $p<.01$ and partial $r=.38$, $p<.05$, respectively).

Moreover, we calculated partial correlation coefficients for correlations between the wives' responses and the husbands' responses (Table 7). There was a significant negative correlation between the husband's depression and support provision to the husband by the wife's response (partial $r=-.42$, $p<.01$). There was a marginally significant negative correlation between the wife's depression and support receipt from the wife by the husband's response (partial $r=-.27$, $p<.10$). With regard to affection for the spouse, there were significant and marginally significant positive correlations with support receipt and support provision by the spouse's response among both wives (partial $r=.29$, $p<.10$ and partial $r=.41$, $p<.01$, respectively) and husbands (partial $r=.45$, $p<.01$ and partial $r=.46$, $p<.01$, respectively).

In the partial correlation analysis shown in Table 7, the most definite correlation with own depression was found with depression in the spouse among both wives and the husbands (partial $r=.52$, $p<.001$). We subsequently conducted a multiple regression analysis with depression of the husband and the wife as dependent variables. As Table 8 shows, own depression was strongly regulated by depression of the spouse among both wives ($\beta =.46$, $p<.01$) and husbands ($\beta =.47$, $p<.01$). This result revealed that the higher the score of depression in the spouse, the higher the score of own depression. Contributions of other independent variables were found as insignificant.

4. Discussion

The objective of this study was to delve into the effects of support provision and receipt as well as the effects of affection on depression in wives and husbands, particularly from the viewpoint of wives and husbands as both receivers and providers of support in the postpartum period.

Our partial correlation analysis found that the husband's depression had significant negative correlations with support receipt from the wife by his response and, correspondingly, support provision to the husband by the wife's response. In contrast, the wife's depression had a significant negative correlation with support provision to the husband by her response and a marginally significant negative correlation correspondingly with support receipt from the wife by the husband's response. Negative correlations were observed between depression and the husband being able to receive support from the wife and the wife being able to provide support to the husband. These results may reflect mutual role expectations for each other in married couples. Additionally, the wife's depression and support from the husband were not significantly correlated in this study. However, it has been previously pointed out that it is important not only to receive support but for the levels of satisfaction and expectation for support to match¹²⁾. Taking this point into consideration, our findings are in line with previous findings.

With regard to affection for the spouse, positive correlations were observed with support receipt and support provision among both wives and husbands. Particularly in the case of the wife, we found strong positive correlations between affection and support receipt from the husband by her response and, correspondingly, support provision to the wife by the husband's response. These results suggest the cyclic nature of the cause and effect relationship. For example, by being able to receive support from the wife, the husband can show increased affection for her, and by feeling affection from the husband, the wife can provide increased support for him. Such correlations between affection and receipt and provision of support in married couples are a new finding, which has never been reported in previous studies. At any rate, this indicates merely an interpretation possibility and future studies are needed to advance this finding.

Our multiple regression analysis found that respondents' own depression was consequently regulated by their partner's depression both among wives and husbands. As the results indicate, the scores of own depression increased proportionally to the score of the spouse's depression and there were no other significant contributions observed as a consequence. Certain correlations, if not significant, were present between support receipt and provision, affection, and depression in respondents themselves and their partners. Our findings elucidate that depression of husbands and wives at a one-month point after childbirth is largely dependent on the depression of their spouse. Although little studies have been conducted on co-existence of PPD in married couples (fathers and mothers)¹²⁾, this study's findings are in agreement with the foregoing finding that depression in fathers (husbands) is particularly regulated by depression of their partner⁸⁾.

Limitations and future research

This study had a small sample size and used cross-sectional survey methodology, and moreover, sampling was conducted at only one time point. This does not allow us to specify the direction of causality. Nevertheless, our findings are suggestive of the mutual and cyclic nature of the cause effect relationship between receipt and provision of support and affection, although no direct evidence of this was provided by this study. Therefore, it is suggested that future research should use a larger sample and a longitudinal study design.

The current study did not find any beneficial effects of support from the spouse (husband) on postpartum mothers, as has been indicated in a number of conventional studies. Despite that, the previous study¹⁸⁾ on which this study relied also did not find any significant effects of support from the husband on depression. We may need to review the overall methodology of assessing social support. Results of the regression analyses shown in Table 8 suggest that the provision of support only from the spouse, or to the spouse is inadequate to alleviate depression. Therefore, there is a need to conduct further research focusing not only on couples, but also on the larger support network around them, including other family members, close friends, and other wives and husbands that are childrearing. For example, previous studies in Japan have shown the importance for the wife of receiving support from her own mother^{20,21)}. As mentioned above, results of this study indicate mutual, and cyclic effects between wives' and husbands' receipt and provision of support and affection to each other. Having larger support networks might assist these effects that buffer wives' and husbands' postpartum depres-

sion and promote their psychological well-being and positive childrearing attitudes.

Conflict of interest

The authors have declared that they have no conflict of interest.

Note

^{†1)}At the time of planning the survey for this study, this survey was not considered as a subject for examination under the research ethics system of the researcher's affiliated institution. Therefore, the survey was conducted based on the Code of Ethics and Conduct of the Japanese Psychological Association^{22,23)}.

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