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Mothers' bonding attitudes towards infants: Impact of demographics, psychological attributes, and satisfaction with usual clinicalcare during pregnancy

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Abstract

Our aim was to examine the hypothesis that bonding difficulty after childbirth is predicted by poor satisfaction with hospital care as well as women's demographic, obstetric, and personality attributes. We investigated 413 women using a set of questionnaires that included the Postnatal Bonding Questionnaire (PBQ), Temperament and Character Inventory (TCI), and Client Satisfaction Questionnaire (CSQ), as well as demographic variables. Regression analyses that sequentially set each of the three PBQ subscales as the dependant variable showed that all three PBQ subscales were predicted by the womens' negative responses to their pregnancies as well as several personality traits. In addition, theAnger and Rejection domain of the PBQ could be explained by perceived satisfaction with usual care, even after controlling for the effects of demographic, obstetric, and personality factors. We should pay more attention to improving medical and nursing care as this has considerable potential to enhance mothers' attitudes towards their babies.

Keywords

Care Satisfaction, Bonding Failure, PBQ, CSQ

1. Introduction

Bonding disorders, characterized by mothers'inability to feel affection for their infants, has been given increasing concern by perinatal mental health professionals [1] - [3]. Bonding failure after childbirth is associated with mothers'psychological maladjustment [4] –[8]. Despite its importance, identification of factors associated with negative maternal bonding has been studied only minimally thus far.

In the present study we hypothesised that bonding failure after childbirth would be predicted by several psychosocial factors. The first of these are age and parity. First-time mothers may experience more difficulties than mothers with more than one child. This may result in greater difficulty establishing affectionate feelings towards their babies.

Younger mothers are less likely to have sufficient support from their partners (who are also likely to be young) and other people. Thus they may feel more frustrated with childcare and are more likey to encounter bonding difficulties.

Second, difficulties during pregnancy, particularly pregnancy-related complications such as hypertension, diabetes mellitus, and a breech foetus, may cause greater worries in pregnant mothers, leading to difficulty in stable bonding with foetuses and subsequently more negative bonding with their neonates.

In addition to the physical complications of pregnancy, we hypothesised that women's negative psychological reactions towards pregnancy would be linked to bonding failure after childbirth. For example, Kokubu, Okano, and Sugiyama (2012) reported that bonding failure after childbirth among a population of Japanese mothers was predicted by an initial negative reaction towards the news of pregnancy and mediated by anxiety in the late pregnancy period [9].

Personality has rarely been studied in relation to bonding failure. There has been ample evidence suggesting a link between terms of fear [10], [11] and anxiety [12] – [14]and a high harm avoidance trait. People high in harm avoidance are cautious, fearful, tense, apprehensive, nervous, timid, doubtful, discouraged, insecure, passive, or negativistic [15]. Such individuals may feel that childcare is frightening and burdensome, leading to negative bonding with their babies. Another personality trait we hypothesized might be linked to bonding difficulty is co-operativeness. It has been reported that affectionate attitudes towards children are associated with co-operativeness among patrents (Kitamura et al., 2009). Thus, we presumed that maternal bonding failure would also be characterized by low co-operativeness [16].

Finally, it is reasonable to assume that improved care by perinatal health professionals during pregnancy may prevent the emergence of negative bonding attitudes towards the baby after childbirth. Pregnant women'sperceived satisfaction with clinical care is likely to reduce the impact of other variables on the onset of bonding failure after childbirth. It is not usual for antenatal clinics in Japan to provide pregnant women with care by mental health specialists such as psychologists and psychiatrists. Nevertheless, usual antenatal care by health professionals, if perceived as satisfactory by pregnant women, may have preventative effects on the occurrence of bonding failure. This issue is of particular importance given that better usual antenatal care is more easily accessible than care by specially trained mental health professionals.

In this study we hypothesized that bonding difficulty after childbirth among a community population of pregnant Japanese women would be predicted by demographic, obstetric, and personality attributes. In addition, our assumption was that bonding difficulty would be associated with poor satisfaction with hospital care even after controlling for other variables.

2. Methods

2.1. Participants

In this multi-wave study we requested the participation of all 55 obstetric clinics in Kumamoto Prefecture, Japan. Kumamoto, with apopulationof about 1,800,000, is a prefecture located in the middle of the island of Kyushu, Japan. Of the 55 antenatal clinics, 18 (33%) agreed to participate in our study. We sought to enroll pregnant women of at least 28 weeks' gestation who attended these clinics during the entire month of November 2011. We excluded women who were illiterate, who had severe mental illness, or who had been hospitalized with pregnancy complications. There were 1,442 eligible women; 626 (43%) of these returned the questionnaire while still pregnant, while 437 (30%) did so on day 5 after delivery.We used the data of the 413 women who responded to the questionnaire both during pregnancy and on day 5 after childbirth. Their mean (*SD*) age was 30.4 (4.8) years, and 98.8% were married. The mean age (*SD*) of the womens' partners was 32.4 (5.9) years. There were 199 first-time mothers (48.2%) and 214 multipara. These statistics did not differ from those of the whole mothers' group.

2.2. Measures

2.2.1. Bonding Failure

We used the Japanese version [17]of the Postnatal Bonding Questionnaire (PBQ) [18]. The PBQ is a self-report questionnaire that assesses parents' attitudes and emotions towards their newborn infants. It consists of 25 items rated on a 6-point scale (0 to 5). Higher scores indicate less positive affection towards the baby and greater psychological burden regarding parenting. Prior to this study, we investigated the psychometric properties of the Japanese version of the PBQ and found that it had a 3-factor structure: Lack of Affection (LA),Rejection and Fear (RF), and Anger and Restrictedness (AR) [19].The first factor, LA, was primarily associated with mothers' lack of maternal affection and intimacy towards their babies.The second factor, RF,appeared to be related to maternal rejection and internal fear of theirbabies, for instance, "I wish my baby would somehow go away", and "I regret having this baby".Finally, the third factor, AR,included items related to mothers' annoyance with or anger towards their babies, for instance, "My baby irritates me", as well as items related to mothers' feeling that they were "trapped" by parenting, for instance, "I feel trapped as a mother"and "My baby cries too much". We also demonstrated the sound reliability and validity of the instrument. The PBQ was distributed to participants at day 5 after childbirth.

2.2.2. Personality

We used the Japanese version [20] of the 130-item Temperament and Character Inventory (TCI) [15]. Kijima and colleagues added five additional Persistence items to the original 125-item TCI [15] in order to increase the internal reliability of the scale [21]. The TCI measures four

temperament dimensions—Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD), and Persistence (PS) — and three character dimensions — Self-directedness (SD), Co-operativeness (CO), and Self-transcendence (ST). The original dichotomous (true or false) response scales were modified into a 4-point scale ("not at all"=0 to "very much so"=3), because this was shown to have better internal consistency among Japanese populations [20]. The reliability and factor validity of the Japanese version of the TCI were reported by Kijima, Tanaka, Suzuki, Higuchi, and Kitamura [21], and Takeuchi, Miyaoka, Tomoda, Suzuki, and Kitamura[22]. We administered the TCI during the pregnancy period.

2.2.3. Womens'Satisfaction with Hospital Care

We administered the Client Satisfaction Questionnaire (CSQ)[23] during pregnancy. The CSQ is an 8-item self-report questionnaire of clients' satisfaction with all types of medical services. Each item is rated on a 4-point Likert scale("very dissatisfied"=1 to "very satisfied"=4). Good reliability and validity of the Japanese version has been reported [24].

2.2.4. Demographic and Obstetric Data

We recorded each woman's age, number of children, complications of pregnancy (such as pregnancy hypertension, placenta previa, and anomaly of the fetus), response to the present pregnancy ("very displeased" = 1 to "very pleased" = 5), and desire for the baby ("not desired" = 1to "very desired" = 5).

2.3. Procedure

All the questionnaires were distributed at the clinics. The participants were asked to bring the questionnaires home, fill them in, and return them to one of the researchers (T.K.) using a stamp-added envelope. This study was approved by the Ethical Committee of Kumamoto University Graduate School of Life Sciences.

Table 1. *Means, SDs, and correlations of the variables used in this study (N = 342 to 413).*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. LA	1.00															
2. RF	.41**	1.00														
3. AR	.40**	.54**	1.00													
4. Age	.11*	−.07	−.06	1.00												
5. No. of children	.03	−.11*	−.18**	.21**	1.00											
6. Pregnancy complications	− .05	−.03	−.05	−.11*	−.02	1.00										
7. Response to pregnancy	.21**	.19**	.17**	−.02	.18**	−.02	1.00									
8. Desire for baby	.04	.01	.01	.16**	−.18**	−.07	−.44**	1.00								
9. NS	−.01	.21*	.16**	0.02	−.04	.00	.07	−.10	1.00							
10. HA	.12*	.15**	.20**	−.16**	−.01	.01	.03	.01	−.20**	1.00						
11. RD	−.11*	−.05	−.16**	−.07	−.03	.03	−.17**	.09	−.01	.02	1.00					
12. PS	−.12*	−.13*	−.07	.00	.04	−.03	−.10	.03	−.18**	−.03	.07	1.00				
13. SD	−.10	−.24**	−.29**	.12*	.05	.04	−.12*	.06	−.32**	−.45**	.16**	.08	1.00			
14. CO	−.09	−.19**	−.32**	.07	.02	−.03	−.12*	.09	−.28**	−.28**	.43**	.15**	.57**	1.00		
15. ST	−.02	−.08	−.06	.05	.00	−.08	−.03	−.10	.22**	−.22**	.03	.22**	−.15**	.02	1.00	
16. Care satisfaction	−.10	−.11*	−.29**	.04	.11*	−.09	−.05	.01	−.15**	−.12*	.24**	.10	.18**	.29**	.05	1.00
Mean	1.90	0.41	8.89	30.44	0.74	1.53	1.27	3.36	24.82	33.38	29.00	16.28	43.62	49.42	17.61	19.39
SD	3.39	1.18	5.89	4.83	0.87	0.50	0.56	1.02	5.86	6.99	4.39	3.08	8.13	6.27	6.11	3.71
Skewness	2.94	4.39	1.11	0.07	1.26	−0.12	2.02	−0.32	−0.14	−0.20	0.17	0.13	−0.45	−0.27	0.33	−0.59
Cronbach's alpha	.79	.53	.77	-	-	-	-	-	.75	.83	.65	.60	.84	.78	.83	.90

* p< .05, ** p< .01, *** p< .001.

LA: Lack of Affection, RF: Rejection and Fear, AR: Anger and Restrictedness

NS: Novelty Seeking, HA: Harm Avoidance, RD: Reward Dependence, PS: Persistence, SD: Self-directedness, CO: Co-operativeness, ST: Self-transcendence

2.4. Statistical Analysis

After examining bivariate correlations of the variables used in this study, we regressed each PBQ subscale scoreon predictor variables using the following five steps. First we entered thedemographic variables that showed significant correlation with the PBQ scores (women's age and number of children). In the second step, we entered the number of pregnancy complications. In the third and fourth steps we

entered the women's response to thepresentpregnancy and the TCI subscale scores. Finally, in the fifth step, we entered the CSQ scores.

The criterion for statistical significance was set at $p < .05$. All statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) Version 20.

3. Results

The scores of the three PBQsubscales were significantly correlated with each other: LA vs. RF, $r = .41$, LA vs. AR, $r = .40$, and RF vs. AR, $r = .54$. Number of children was associated only with AR. Women's negative response towards the current pregnancy was associated with all three PBQ subscale scores. Some dimensions of the TCI were significantly associated with the PBQ subscale scores. Of the three PBQ subscales, RF and AR were negatively correlated with care satisfaction. We then conducted regression analyses, sequentially setting each of the three PBQ subscales as the dependant variable.

The LA scores were significantly predicted by a negative response to the current pregnancy (standardised beta = .23, $t = 3.67$, $p = .00$), desire for the baby (standardised beta = −.13, $t = 2.10$, $p = .04$) and low PS (standardised beta = −.11, $t = -1.99$, $p = .05$). The RF scores were predictedby a negative response to current pregnancy (standardised beta = .17, $t = 2.77$, $p = .01$) and low SD (standardised beta = −.16, $t = -2.06$, $p = .04$) . Care satisfaction failed to predict LA or RF scores after controlling for these variables. Standardised R^2 were .13 for LA and .12 for RF.

The ARscores were predicted by fewer children, negative response to the current pregnancy, low CO, and poorer satisfaction with usual care at the antenatal clinic (Table 2).

Table 2. *Hierarchical multiple regression analyses predicting PBQ (AR) score atday 5.*

	R^2	R2 increase	Standardised beta	t
Step 1: Demographics	.037	.037**		
age			.086	1.61
No. of children			−.202	−3.81***
Step:2: Pregnancy Complications	.041	.004		
Number of pregnancy complications			−0.48	−0.93
Step 3: Psychological response	.085	.043**		
Response to pregnancy (very displeased: 1, to very pleased: 5)			.182	3.16**
Desire for baby (not desired: 1, to very desired: 5)			.081	1.39
Step 4: Character and Temperament	.199	.114***		
NS			.089	1.45
HA			.120	1.86
RD			.005	.05
PS			.027	.504
SD			−.066	−.921
CO			−.150	−2.17**
ST			−.051	−0.91
Step 5: Care Satisfaction	.229	.030**		
CSQ			.186	−3.50**
Standardised R^2	.197			

* $p < .05$, ** $p < .01$, *** $p < .001$.
NS: Novelty Seeking, HA: Harm Avoidance, RD: Reward Dependence, PS: Persistence, SD: Self-directedness, CO: Co-operativeness, ST: Self-transcendence

4. Discussion

This study showed that all three subscales of the PBQ could be predicted by the women's negative response to their pregnancy. In addition, LA was predicted by a lesser desire for having a baby and AR was predicted by a smaller number of children. As regards the women's personality, the PBQ subscales were differentially correlated with personality traits. Thus, LA was predicted by low PS, RF by low SD, and AR by low CO. Finally the present study demonstrated that women's better perception of their usual clinical care was associated with lower AR.

The severity of women's bonding failure was linked to their negative response toward pregnancy.This echoes the results of Kokubu, Okano, and Sugiyama [9], who found that in a small community sample of pregnant women,both the women's and their partner's negative attitudes towards the pregnancy were significant predictors of bonding failure after childbirth. In this study, the negative response to pregnancy among pregnant women was correlated with low RD, SD, and CO (Table 1).Low SD and CO have frequently been reported as being correlated with depression. Minatani et al. [25] reported that depression during pregnancy was predicted by women's negative attitudes towards the current pregnancy. Clinicians should pay special attention to women's attitudes to their pregnancies; negative attitudes may indicate the need for early psychological intervention.

Few studies have examined the association between mothers' personalities and their bonding towards their infants. A previous study examingschool-age children of grades 5–9showed that affectionate attitudes towards

children were associated with co-operativeness among parents (Kitamura et al., 2009).Our finding that bonding failure was negatively related to SD and CO is consistent with previous results showing that immature personality, characterized by low SD and CO, was correlated with poor foetal bonding and bonding failure after childbirth [26], [27]. Contrary to our expectations, HA did not predict any aspect of bonding failure. Bonding failure may be different from fear, anxiety, or depression.

Another important finding of our study is that the AR domain of the PBQ could be explained by perceived satisfactionwith usual care even after controlling for the effects of demographic, obstetric, and personality factors. The more women are satisfied with the medical and nursing services they receive during the antenatal period, the lessaggression they feel towards their newborn babies. The CSQ assessed how the comprehensive services the women received at the clinics they attended met their needs. It is possiblethat if professionals can build supportive and sympathetic relationships with women and appropriatelyaddress individual concerns during pregnancy, the women might be more accepting ofand feel less annoyance with their babies.Ample studies have suggested buffering effects of social support on postpartum disorder [28] –[30]. For example, Sonobe et al. revealed that the number of medical workers and professionals in womens' support networks were related to the degree of parenting stress [31].In addition, poor perceived support was reported to be related to the onset of depression [32] – [34]. Our study may be unique in that we analysed the influence of support at theclinic level on maternal bonding.

Nevertheless, our resultsmay have been confounded by other variables. For example, in zero-order correlation analyses, CSQ scores were associated with low NS, HA, RD, SD, and CO. Low RD, SD, and CO were associated with high AR. Hence these personal traits may confound the effects of perceived satisfaction with care on mothers' feelings of anger towards their babies. We think, however, that this hypothesis may be refuted by the fact that these associationswere still significant even after controlling for personality trait scores. What remains to be investigated is which aspects of usual care contribute to preventing anger and restrictedness—perhaps health professionals' empathic attitudes or their ability to provide information of adequate quality and quantity? Such information may enhance medical and nursing care and thusimprove mothers' attitudes towards babies.

Our results are not free from limitations. Regression analysis showed that only 12% to 20% of variance of the PBQ subscale scores were explainedby our model. More than 80% of variance must therefore be explained by factors that were not included in the present investigation. Because this was a questionnaire survey, it is subject to a variety of biases. Future investigations should make use of interview methods. The attrition rate of the participants (only 29% of eligible women completed the two-wave surveys) is another drawback of the study.

Taking into accout these shortcomings, our report still suggests that maternal bonding difficulty after childbirth can be predicted by women's negative attitudes towards pregnancy, their personality traits, and their poor perception of clinical care.

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