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How Does Maternal Depression Relate to Maternal Elaboration?

Yiyun Jiang*

Department of Psychology, University of York, Heslington, the city of York, UK
jyyjoe@126.com
**corresponding author*

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Abstract: The aim of this study was to validate a scheme to code maternal elaboration in a non-memory context in order to explore its relation with maternal depression both concurrently and longitudinally. The study explored the maternal depression at four time points (8, 15, 26, 44 months after giving birth) and five coding styles of maternal conversation. The coding styles for maternal conversation were as follows: MQ-Elab, YN-Elab, ST-Elab, CONF, and REP. The study indicated that the maternal depression showed a negative correlation with styles of maternal conversation at the 8-month age. The correlation between maternal depression and maternal elaboration has become weaker as time goes by. These findings suggested that the maternal depression was correlated with the maternal elaboration, providing both theoretical and practical contributions for future research and application in reality.

1. Introduction

Maternal depression is observed increasing in many countries and regions nowadays. According to the DSM-5, postpartum depression is a form of major depression. It causes a serious of physical, emotional, and behavioral changes after delivery. Although depression causes a variety of behavior and speech disorders in patients, different maternal depression patients have some differences in individual behavior, mother-child relationship, and the healthy degree of speech development of their babies varies. In other words, the parent-child relationship and mother-child communication of some patients with maternal depression are significantly negatively affected. In clinical interventions, maternal depression is associated with negative verbal expression. Mothers' elaboration during conversations with their children may be influenced by maternal mental health. Wareham and Salmon supported the hypothesis that there was a correlation between maternal depression and elaboration, which argued that depressive mothers tend to be less elaborative [1]. Previous researches have shown that the maternal depression was associated with child-mother's behavior, the presence of behavioral disturbance at home, and the content and social patterning of playing [2]. This indicates that the maternal depression could be a direct or indirect factor that associates with maternal elaboration.

Elaboration entails adding detailed and additional information to conversational exchanges. Elaboration is one of the parts of the interpersonal conversation. According to Fivush and Fromhoff, due to the different characteristics of different mothers, mother-child conversation style varies [3].

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There are different ways to classify variation in maternal elaboration: Emotional or structural, high elaborative or low elaborative, etc. [4]. Emotional elaboration means that mothers' elaboration involves asking for some information on attitudes and feelings. Structural elaboration refers to asking for non-emotional related details. High levels of maternal elaboration mean that the mother encourages the child and herself to have detailed and extensive conversations. This kind of conversation usually contains questions and discussions. In contrast, the low elaborative conversation includes more repetitions and less new information or detailing [5]. Although different mothers have different ways of having conversations with their children, mothers' elaborative style is consistent over time and contexts [6, 7], and also consistent across siblings [8]. This suggests that elaborative style during joint reminiscing is not a function of the individual characteristics of the child or the situation. But apart from the above studies, there are also researches reported that the gender of the child is associated with the elaboration style for both mothers or fathers in families [9, 10]. Researchers found that parents tended to be more elaborative when they were having the conversation with daughters than with sons. This indicated that individual differences in the child could be the factor that affected the correlation between adult-child conversation and other predictors. In addition, it is also notable that the difference between girls and boys for their parents' using diverse content in parent – child conversation lies in the key point of emotional language [11]. It is the distinct use of emotion terms between parents towards daughters and boys leads to the gender difference, not other use of elaboration style. In terms of emotion language, research has also shown that the emotional elaboration predicted less specific child autobiographical memory at low structural support [4]. Thus, whether the use of emotional elaboration benefits for the conversation is determined by if it is appropriate to use in the context with a combination with other ways of speaking.

However, the mechanism between maternal depression and maternal elaboration was still unclear. In the meta-analytic review conducted by Lovejoy, Graczyk, O'Hare, and Neuman [12], there was a strong correlation between maternal depression and negative parenting behavior. This means that mothers with depression tend to engage or interact less with their children. In addition, comparing to past maternal depression, the current maternal depression has the biggest effect on parenting behavior. But because maternal behavior and maternal conversation is not the same thing, the exact relation between maternal depression and elaboration is left to be explored. Another research has shown that maternal depression leads to a decrease in parent-child conversation and an increase in negative parenting behavior [1]. The parent-child conversation about daily experiences plays an extremely important role in children's social cognitive function development. In the study of the clinical intervention, although there are many causes of maternal depression, the academia is also trying to explore whether the impact of maternal depression on the development of preschool children can be reduced by improving maternal elaboration style. It has also been shown in this study that elaboration style can be improved and learned, which provide hope to mothers who are suffering from maternal depression but want to give their children a better parenting experience. In the study conducted by Reese, Meins, Fernyhough, and Centifanti [13], the relationship between maternal elaboration style and maternal depression, maternal sensitivity, and mind-mindedness was explored. The study found that the mother's sensitivity, which related to the mother's mental health status, can independently predict the maternal elaboration. Especially for negative emotional events, sensitive mothers showed more encouragement to engage children in dialogue, i.e. high-level elaboration style, in their early interactions with children. This study formed a full model for the mother-child reminiscing style and provided valuable thinking and further research direction for the later research and exploration.

Given that the relation between elaboration and maternal depression and other factors have not reached a solid conclusion so far, this research is to explore the relation between maternal

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depression and maternal elaboration with the overall objective of raising awareness of maternal mental health issues around the world and mobilizing efforts in support of new born babies and mothers. The aim of the current study was to validate a scheme to code maternal elaboration in a non-memory context in order to explore its relation with maternal depression both concurrently and longitudinally. It may be that the observed relations between maternal depression and maternal elaboration during joint reminiscing are specific to talk about experiences that the mother and child have shared together in their lives. Removing the personal shared context of elaboration may thus mean that maternal depression will no longer relate to maternal elaboration. Conversely, it could be argued that mothers who are suffering from higher levels of depressive symptoms and have less optimal relationships with their children will be less likely to engage in elaborative exchanges with their children during a collaborative task. Therefore, we assumed that there would be a negative association between elaboration and maternal depression.

2. Method

2.1. Participants

After managing the missing values in all variable categories, the final set of the data taken into whole analyzing is 165 mother-child dyads who were tested at 8 (M = 8.52, SD = 0.48, range 7–10), 15 (M = 15.50, SD = 0.60, range 13–17), 26 (M = 26.04, SD = 0.86, range 24–28), and 44 (M = 44.06, SD = 0.83, range 42–46) months. The study was first done on 206 mother-child dyads of healthy volunteers who provided informed consent. The full sample was tested at each of the first three phases (8 months, 15 months and 26 months), and data for 171 mother-child dyads were available at 44 months. All dyads at Phase 4 were White. Attrition was due to families either moving away from the area or being unable to schedule convenient testing times. Compared with the families who were retained throughout the study, those who failed to complete the Phase 4 testing did not differ on scores for any of the variables.

The mother-child dyads decreased due to various reasons such as moving or inconvenient traffic during the four tests time points among 8 months, 15 months, 26 months, and 44 months. Five mothers have not completed the 8 months Beck Depression Inventory at the first time point. 201 mothers completed the BDI at the first time point at 8 months, 198 mothers at 15 months, 197 mothers at 26 months and 165 mothers at 44 months. There were 171 mother-child dyads took part in the collaborative tasks at the 44 months' time point. The 171 mother-child dyads verbal conversation transcriptions were collected and have been coded into 5 categories: MQ-ELAB, YN-ELAB, ST-ELAB, CONF, and REP.

2.2. Procedure

Data were collected as part of an Economic and Social Research Council (ESRC) grant awarded to Professor Elizabeth Meins. The paper was also completed under the guidance of Professor Elizabeth Meins and the heartfelt thanks to the teacher for her serious advice should be expressed here. The testing phase at 44 months included a collaborative task involving the mother and child. The archive data from this task were used in the current project to assess maternal elaboration in a non-memory context. The project was completed in collaboration with two other MSc students, and the data coding was split equally among the three students. The maternal depression and attachment security data used in this project were collected and coded previously as part of the ESRC grant.

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2.2.1. Maternal Depression

Maternal depression was assessed using the Beck Depression Inventory [14] at each testing phase. Higher scores indicated higher levels of depressive symptoms. These follow variables were tested in the analyzing process: BDI8 (Beck Depression Inventory score 8 months), BDI15(Beck Depression Inventory score 15 months), BDI26 (Beck Depression Inventory score 26 months), and BDI44 (Beck Depression Inventory score 44m).

2.2.2. Maternal Elaboration

When children were 44 months, they participated with their mothers in a collaborative play task that was modelled on Haden, Ornstein, Eckerman, and Didow's procedure [15]. The task involved a pretend camping trip and was conducted in the developmental laboratory. A series of props was laid out around the room, and the mother received a set of brief instructions on the activities that needed to be completed: put food into the backpack, keep following the path to the pond, catch a fish, follow the path to the campsite, cook a meal and eat it, go to bed. There was no time limitation for the tasks and mothers were told that they could spend as long as they wanted to complete the task with their child. The task was filmed.

2.2.3. Coding

The mother-child conversations were transcribed verbatim from the video recordings. As well as all speech, the transcripts indicated non-verbal communicative gestures such as nodding or shaking head. The aim of the present study was to develop and validate a coding procedure for assessing maternal elaboration during this non-memory task. Reese and Newcombe's scheme for coding mother–child memory conversations was used as the starting point [16]. The three members of the project group independently sectioned 10 transcripts into individual comments and coded each comment using the adapted Farrant and Reese scheme. The independently coded transcripts were then compared to establish any patterns of disagreement. The transcripts were then independently coded for the second time. The three coders were found to show good levels of inter-rater reliability (84.96-97.74%). The coding scheme was thus used to assess elaboration in the whole sample of transcripts. Each maternal comment was coded into one of the following exhaustive and exclusive categories:

1. Elaborations

Mothers' comments that introduce new information to the interaction or give additional information on a topic.

- Question Elaborations (code MQ–ELAB): any question that asks the child to provide new information (e.g., What's that number? How many fish are there? Where should we put the food? When shall we have tea?)
- Yes–No Elaborations (code YN–ELAB): any question simply requiring the child to confirm or deny a piece of information provided by the mother (e.g., Do you want ketchup?). Tag questions are included in this category (e.g., It's like our barbeque at home, isn't it? You like chips, don't you?)
- Statement Elaborations (code ST–ELAB): any statement that provides the child with additional information but does not require a response (e.g., That's to light to barbeque.)

2. Repetitions (code REP)

- Mothers requested the exact same content or the gist of a previous utterance, regardless of whether the previous utterance was a statement or question. Repetitions could be in the form of

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questions, yes-no questions or statements. (e.g., M: It's only pretended, isn't it? /It's not real/. Yeah?)

3. Confirmations (code CONF)

- Comments that confirmed a child's previous utterance and often included repetition of the child's utterance (e.g., Mother: What's that number? Child: Three. Mother: Three, that's right).

Transcripts were divided equally among the three project students for coding. Each student additionally coded a randomly selected 20% of the transcripts coded by each of the other two students in order to establish inter-rater reliability. The individual reliabilities (agreement and kappa coefficient) were as follows: MQ-ELAB= 97.74, ST-ELAB=84.96, YN-ELAB=94.11, CONF=96.85, REP=95.52. Because the overall unweighted kappa value was from 0.69-.81 between the three coders, which were basically greater than 0.4, the coders have reached fair to good agreement.

3. Results

To validate a scheme to code maternal elaboration and explore its relationship with maternal depression, a Pearson correlation was used. The results showed that: Maternal depression was significantly negative correlated with CONF, MQ-Elab, YN-Elab and total frequencies of elaboration at the 8-month time point. The descriptive statistics for the maternal elaboration and maternal depression at four time points were presented in Table 1.

3.1. Descriptive Statistics and Preliminary Analyses

Table 1: Descriptive statistics for the maternal elaboration variables and maternal depression.

	N	Range	Mean	Std. Deviation
Beck Depression Inventory score at 8 months	201	42	8.41	7.690
Beck Depression Inventory score at 15 months	198	41	7.17	6.440
Beck Depression Inventory score at 26 months	197	46	8.11	8.179
Beck Depression Inventory score at 44 months	165	35	6.38	6.529
CONF	171	100	15.33	11.679
MQ	171	60	18.41	13.176
REP	171	24	5.23	4.629
ST	171	132	45.90	22.483
YN	171	135	57.58	27.480

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In the preliminary analyses, the associations with child gender for maternal depression and elaboration was tested. No significant correlation was found between gender and maternal depression as well as gender and the maternal styles of elaboration. Thus, gender was not included in the following analyzing model as covariates.

3.2. Relations Between Maternal Depression and Maternal Elaboration

Table 2 showed the correlation between maternal depression at four time points and maternal elaboration. Although the data did not completely conform to the normal distribution, the Pearson correlation was still used because of the relatively large sample size.

The results indicated that maternal depression was significantly negatively correlated with frequencies of confirmation in maternal verbal conversation (r=-0.214, p=0.005) and was negatively correlated with MQ-Elab (r=-0.167, p=0.030), YN-Elab (r=-0.178, p=0.021) and total frequencies of elaboration as well (r=-0.177, p=0.022) at the 8-month time point. At the 15-month, maternal depression only showed a significant negatively correlation with MQ-Elab (r = -0.166, p = 0.033). At the 26-month, maternal depression shows negative correlation with MQ-Elab (r = -0.165, p = 0.032) and total frequencies of elaboration (r = -0.164, p = 0.033). At the 44-month time point, no significant correlation has been found between maternal depression and maternal elaboration. Over time, the correlation between maternal depression and maternal conversation decreased from high correlated by in three factors at 8 months postpartum to only one factor at 15 months. Although the correlation still increased at 26 months to two factors, it ceased to be associated with maternal depression and maternal conversation at 44 months postpartum.

Table 2: correlations between maternal depression and maternal elaboration.

	CONF	MQ	REP	ST	YN	TotalElab
Depression score at 8 months	-.214**	-.167*	-0.08	-0.087	-.178*	-.177*
Depression score at 15 months	-0.062	-.166*	-0.005	-0.101	-0.094	-0.138
Depression score at 26 months	-0.124	-.165*	-0.06	-0.093	-0.15	-.164*
Depression score at 44 months	-0.045	-0.149	-0.016	-0.095	-0.121	-0.145

*$p < 0.05$, **$p < 0.01$

4. Discussion

There were some main findings for this research about maternal elaboration and maternal depression with both concurrent and longitudinal data. It was correlated with maternal depression and maternal elaboration at 8,15 and 26 months. Although the introduction part has provided studies showing that parents tend to use different conversation strategies with daughters and sons [9, 10],

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the effect of gender on maternal elaboration is not significant in this study. A possible explanation could be that it was the differences in the levels of language development between boys and girls affected the maternal elaboration but not gender itself. Another explanation could be that though gender was correlated with the emotional content of the parent – child conversation [17], it might be the emotional understanding as the key role in gender differences in parent – child conversation. The coding of the elaboration style in this study did not relate to emotional or non-emotional contents during the maternal conversation. That is, the reason why gender showed a nonsignificant correlation with maternal elaboration in this study.

At the three time points of 8, 15, and 26 months, maternal depression was correlated with the way in which the mother elaborated, especially for the MQ-Elab. There was a negative correlation between maternal depression and MQ-Elab. This indicated the effect of maternal depression on conversation styles especially led to less open questions and interaction. The explanation could be discussed from below: a) One of the main symptoms of maternal depression or major depressive clients was to tend to speak less and have less interpersonal communication. b) The style of MQ-Elab would lead to more content and further interpersonal communication which against the willing of maternal depressive mothers. c) The other four styles of the maternal elaboration (ST-Elab, YN-Elab, CONF, REP) were less interactive than the MQ-Elab. These may be the reason why the MQ-Elab showed the negative correlation with maternal depression. Another explanation could be that mothers who had maternal depression tended to take as full responsibility as possible to lead the child to finish the game so that their speaking strategy was to use more specific conversation styles as simple as it could be. The other four maternal elaboration styles could only lead to a single round: question and answer while MQ-Elab would lead to more complicated rounds. The result of the nonsignificant correlation between maternal depression and elaboration was in line with the previous research which found that maternal depression was not a significant predictor of a maternal elaboration whether the conversation involved positive or negative content [13]. But Wareham and Salmon supported the hypothesis that there was a correlation between maternal depression and elaboration which argued that depressive mothers tended to be less elaborative [1]. Although this study did not share the similar results with Wareham and Salmon, it could be to agree on the opinion of the clinical intervention of their research: It is worthy to encourage and help depressive mothers to learn how to elaborate in different styles. In this way, mothers with slight and moderate maternal depression could somewhat cope and improve the mother-child conversation as well as the security attachment status [18,19] for the benefit of their children.

To have further discussion about the relationships between maternal depression and maternal elaboration, there are some extension discussions. In contrast with the assumption that mothers with maternal depression will have less engagement in the interpersonal interaction with their children which tend to associate with lower levels of maternal elaboration, the result showed that maternal depression at early child age (8 months) has a stronger association with maternal elaboration than that at the current age (44 months). This indicates that maternal depression at early child age can somewhat predict the maternal elaboration more than maternal depression at later child age. This finding provides evidence for the assumption that the association between maternal depression and maternal elaboration is predictive. The possible explanation could be that the maternal depression diminished by the time after giving birth or much more social support has been reached for the depressive mothers as time goes by. The explanation has not reached to a solid conclusion so that further study needs to be done in the future.

5. Limitation

The first limitation of this study is that because the samples are not clinical samples, the suggested application, in reality, clinical intervention should be considered cautiously in this study. That is

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why it is so exciting to put this study into the context of a longitudinal research. Second, the study was conducted among the Whites in the context of western native English speakers. The results could be different in other cultural or ethnic backgrounds. For example, given that the eastern culture generally encourages the less oral expression of emotional feelings, the frequency or style of maternal elaboration could vary in eastern cultures.

6. Conclusion

This study indicates that maternal depression has a negative correlation with styles of maternal conversation at an early age: 8-months. The correlation between maternal depression and maternal elaboration has become weaker as time goes by. Through this research, we might benefit from the following aspects: 1) Raising the attention to the importance of mothers' elaboration when interacting with their children. 2) Exploring some possible ways to develop better mother-child relationship from the application of changing how to talk to children. 3) Providing some advice to consulting and training organizations for parents and family support especially for the maternal depression clients.

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