Maternal Depression, children's Play behaviors and behavior problems in Early Childhood

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Abstract—This study examined the relationship between maternal depression and child play disconnection in three year of age, and its relations to child behavior problems a year later. The participants of this study were 416 children and their mothers who participated in the Panel Study on Korean Children. Mothers rated questionnaires to measure depression and child behavior problems. Child play disconnection was assessed by a teacher report. Results showed that maternal depression was positively correlated with child play disconnection in three years of age. Then, the correlation between maternal depression and child behavior problems was also significant. Therefore, these suggested that maternal depression is a risk factor for children's internalizing and externalizing behavior problems even later in life.

Keywords—Maternal depression, play disconnection, internalizing behavior problems, externalizing behavior problems

I. INTRODUCTION

IT has been known that maternal depression is one of risk factors for children's mental health in early years. Previous studies showed that young children with depression mothers reported higher levels of aggression and play disconnection than did those with non-depressed mothers (1, 2). In addition, maternal depression was significantly related to child depression and maladaptive behaviors (3). This study suggested that depressed mothers were more likely to show harsh parenting behaviors (4), and thus, harsh parenting behaviors may leads to children's behavior problems (5). However, most of previous studies examined the relationship between maternal depression and children's behavior problems on the basis of cross-sectional design. Maternal depression and child outcomes were measured at the same time in cross-sectional studies. As a result, it would be difficult to conclude whether maternal depression affects children's behavior problems later in life.

The purpose of this study was to examine the longitudinal relationship between maternal depression and children's behavior problems. This study also aimed at examining the relationship child play disconnection and behavior problems. Research questions were addressed as follows.

1: Is there a significant relationship between maternal depression and children's play behaviors at each of 3 and 4 years of age?

2: Is there a significant relationship between maternal depression at 3 and 4 years, and children's behavior problems at 4 years?

3: Is there a significant relationship between children's play behaviors at 3 and 4 years, and behavior problems at 4 years?

II. METHOD

A. Participants

This study analyzed the data of 2150 children and mothers who participated in the Panel Study on Korean Children in this study. A stratified multi-stage sampling technique was used. The data was analyzed in this study were collected between 2011 and 2012. After eliminating samples which contain many missing value and respondent errors, the data of 416 children and their family were included in this study. About demographics, 215 were boys (51.7%) and 201 were girls (48.3 %). The average age of children and mothers was 3.12 years ($SD = 0.19$) and 33.79 years ($SD = 3.73$) in Time 1, and 4.33 years ($SD = 0.1$) and 34.74 years ($SD = 3.8$) in Time 2. One hundred twenty five mothers graduated high school (30%), and two hundred ninety mothers competed college education (70%).

B. Measures

Child behavior problems

The Korean version of Child Behavior Checklist for ages 1.5-5(6) was used to assess children's internalizing and externalizing behavior problems. Externalizing behavior problems includes 24 items (i.e. attention problems and aggressive behavior) and internalize behavior problems includes 36 items (i.e. emotionally reactive, anxious/depressed, somatic complaints, and withdrawn). Parents rated each item 0(= not true), 1(= sometimes true), and 2(=very true). Cronbach's alpha for externalizing and internalizing behavior problems were .88 and 85, respectively.

Maternal depression

Maternal depression was assessed using six items in a short screening scale developed by Kessler (7). Mothers were asked to rate how frequently they experienced depression, anxiety, and emotional distress from 0 (none of the time) to 4 (all of the time). Cronbach's alpha was .91 in Time 1 and .92 Time 2 in this study.

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Child play disconnection

The Penn Interactive Peer Play Scale (PIPPS) was used (8). The PIPPS consists of 30 items. The PIPPS included three subscales: play interaction, play disruption, and play disconnection. Eight items in play disconnection were used in this study. Teachers rated children's play behaviors during free play. Cronbach's alpha was .82 in Time 1 and .82 Time 2 in this study.

C. Data analysis technique

First, descriptive statistics such means and standard deviations of research variables were reported in Table 1. Then, we calculated correlations between variables. SPSS 18.0 version was used to analysis.

III. RESULT

TABLE I
MEANS AND STANDARD DEVIATIONS OF MAIN VARIABLES IN TIME 1 AND TIME 2 (N=416)

Variables	M	SD
Maternal depression		
T1	11.79	4.34
T2	11.77	4.62
Child play disconnection		
T1	12.71	3.65
T2	12.21	3.52
Child behavior problems		
Externalizing T2	8.10	5.75
Internalizing T2	8.62	6.20
Total problems T2	26.44	16.38

Note. T1 = Time 1; T2 = Time 2; Externalizing = externalizing behavior problems; Internalizing = internalizing behavior problems; Total problems = total behavior problems.

Correlations between child and mother variables were reported in table 2. First, significant correlations were found between maternal depression and child play disconnection. Maternal depression in Time 1 was positively related to child play disconnection in Time 1 ($r = .06, p < .01$), and when these variables were again examined in Time 2, correlations showed a similar pattern ($r = .05, p < .01$).

Next, in table 2, there were significant correlations between maternal depression and behavior problems that consist of externalizing behavior problems, internalizing behavior problems, and total behavior problems of child. Maternal depression in Time 1 was positively associated with externalizing behavior problems ($r = .21, p < .01$), internalizing behavior problems ($r = .20, p < .01$), and total behavior problems ($r = .21, p < .01$). Maternal depression in Time 2 also had positive correlations with externalizing behavior problems ($r = .31, p <. 01$), internalizing behavior problems ($r = .27, p < .01$), and total behavior problems ($r = .30 p < .01$). In these results, externalizing behavior problems revealed the most correlations with maternal depression in both Time 1 and Time 2.

Finally, table 2 showed significant correlation between child play disconnection and behavior problems. Child play disconnection in Time 1 was positively related to externalizing behavior Problems ($r = .03, p < .01$), internalizing behavior problems ($r = .09, p < .01$), and total behavior problems ($r = .07, p < .01$). As to child play disconnection in Time 2, there were positive correlations between child play disconnection and behavior problems (externalizing behavior problems $r = .15$; internalizing behavior problems $r = .12$; total behavior problems $r = .14; p < .01$).

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TABLE II
LONGITUDINAL CORRELATIONS AMONG MATERNAL DEPRESSION, CHILD PLAY DISCONNECTION, AND BEHAVIOR PROBLEMS FROM TIME 1 TO TIME 2

Variables	Maternal Dep T1	Maternal DepT2	Disconnect T1	Disconnect T2	Externalizing	Internalizing	Total problems
1. Maternal Dep T1	−						
2. Maternal Dep T2	.52**	−					
3. Play Disconnect T1	.06**	-.02**	−				
4. Play Disconnect T2	.12**	.05**	.24**	−			
5. Externalizing T2	.21**	.31**	.03**	.15**	−		
6. Internalizing T2	.20**	.27**	.09**	.12**	.70**	−	
7. Total problems T2	.21**	.30**	.07**	.14**	.89**	.91**	−

Note. N = 416. T1 = Time 1; T2 = Time 2; Maternal Dep = maternal depression; Play Disconnect = child play disconnection; Internalizing problems= internalizing behavior problems; Externalizing problems = externalizing behavior problems; Total problems = total behavior problems. **P < .01