MOTHER'S DEPRESSION AND MEDIA TIME IN TODDLERS

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I. INTRODUCTION

As new technology has developed, electronic media has become an important part of life.[1]Children's usage is increasing rapidly, and screen exposure tends to start during early infancy.[2-4]Zimmerman et al.[5] reported that 40.0% of infants younger than 12 months of age and 90.0% of toddlers had been exposed to screens, far exceeding the 2 hours recommended by the American Academy of Pediatrics (AAP). The adverse effects of screen time were summarized in recent reviews.[6-8]Excessive screen time was associated with numerous lifestyle issues[9-12]aggressive behavior;[11,13] social problems;[14] attention problems and hyperactivity;[15]and sleep[16,17]and developmental problems including language[18] and cognition deficits[19]and poor school performance.[8,20]Factors associated with media exposure in children include sex, parental educational level, age, environmental factors, and sociocultural factors.[21]Mothers with depressive symptoms are less sensitiv eand responsive to their child's needs and exhibit less self-efficacy relative to mothers without depressive symptoms.[22]In addition, depressed mothers are less interested in their children's daily lives and have less control over their children's problematic behaviors.[23] Depression has also been associated with a lack of health-promoting behavior ,[24]and children are likely to model depressed mothers' behavior.Burdette et al. found that mothers' depression was associated with excessive TV viewing in children aged 3–4 years[25]Because of the relatively paucity and inconsistency of findings in this area,we examined the hypothesis that maternal depression would be associated with an increase in toddlers' screen time.

II. METHODS

This research was conducted as part of the Internet-Cohort for Understanding of internet addiction Risk factors/ Rescue in Early livelihood (I-CURE) study.After receiving a detailed presentation on the design and purpose of the survey, 400 parents of 2- to 5-year-old children were invited to enroll their children in the study. Data were collected from residents in Korea, between December 1, 2015, and June 30, 2016. Ultimately, families of 390 children (i.e., 97.5% of those who provided consent) provided sufficient data for inclusion in the I-CURE study.Parents provided information regardingchildren's sexes and birthdates, maternal and paternal educational levels and income.Respondents were asked whether they owned the following 6 types of media: televisions, smartphones, computers, tablet PCs, video consoles, and portable game devices.Data regardingthe average amount of time that children spent usingeach type of media during the preceding month were also collected. Responses were divided into those pertaining to weekdays and weekends. Depression was measured using the Korean version of the Beck Depression Inventory (BDI), which is a self-report questionnaire consisting of 21 itemspertaining to emotional, cognitive, and physiological symptoms.[26]To test the relationship between maternal depression scores and weekly television watching hours, crude and multivariable regression analysis was used. In an adjusted model, child's age, gender, maternal education and income was included as adjusting variables.

III. RESULTS

Descriptive data are shown in Table 1. Children of depressed mothers watched TV for 4.9 days per week, on average, while those of nondepressedmothers watched TV for 4 days per week, on average. The results showed that TV exposure was related to maternal depression(Table 2).In the current study, 39.0% of toddlers watched TV almost every day, and48.0% and 63.1% watched TV for over an hour on weekdays and weekend days, respectively. Moreover, many of the children watched TV for several hours on weekends.

CONCLUSION

Young children are unable to distinguish between fantasy and reality,as they have not developed abstract reasoning abilities and therefore tend to absorb TV content intuitively.In longitudinal studies, early childhood screen exposure has been shown to persist into later childhood and adolescence. As TV viewing patterns are formed during infancy, it is advisable to intervene as early as possible.[10]Our findingsare similar to those of previous studies. In 2007, Thompson and Christakis reported that the total time that children of depressed mothers'spent watching TV was 25.0% longer relative to that observed for children ofnondepressed mothers.[17]In 2012, Bank et al. reported the amount of time that families in which mothers were depressed spent watchingTV wastwice that observed for families in which mothers were not depressed.[18]Depressed mothers usually respond less sensitively to their

children's needsand are less likely to set boundariesfor their children. In addition, depressed mothers' children have been found to be less able to control their behavior and emotion relative to other children.The current study focused on toddlers;therefore, although the results showedthat maternal depressionwas associated with TV viewing in children in this age group, they cannot be generalized to children of other ages.Asthe BDI is not a diagnostic tool, additional diagnostic procedures are required.In addition, mothers' reportsregarding their children's screen time could have been underestimated or overestimatedrelative to the results of direct measurement.In addition, as this was a cross-sectional study, it was not possible to determine whether maternal depressive symptoms caused increasesin children's TV viewing time. Despite these limitations, mothers' depression wasfound to be associated with increasedTV viewing time;therefore, consideration of mothers' mental health is important in interventions designed to reduce TV viewing time in very young children.

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Group n (%)	Non-depressed mothers (n=247)	Depressed mothers (n=143)	p-value
Age			0.9611
2	10 (4.1)	5 (3.5)	
3	79 (32.0)	41 (28.7)	
4	102 (41.3)	62 (43.4)	
5	53 (21.5)	33 (23.1)	
	3 (1.2)	2 (1.4)	

Gender			0.2740
Boys	124 (50.2)	80 (55.9)	
Girls	123 (49.8)	63 (44.1)	
Main caregiver (n = 387)			0.7095
Mother	231 (93.9)	132 (93.6)	
Father	1 (0.4)	0 (0.0)	
Grandparents	11 (4.5)	8 (5.7)	
Other relatives	1 (0.4)	1 (0.7)	
Else	2 (0.8)	0 (0.0)	
Father's education level (n=389)			0.1305
≥12 years	224 (90.7)	119 (83.8)	
9–11 years	22 (8.9)	20 (14.1)	
<9 years	1 (0.4)	2 (1.4)	
Else	0 (0.0)	1 (0.7)	
Mother's education level			0.0007
≥12 years	227 (91.9)	114 (79.7)	
9–11 years	17 (6.9)	29 (20.3)	
<9 years	2 (0.8)	0 (0.0)	
Else	1 (0.4)	0 (0.0)	
Income per month			0.0193
<₩1,000,000	3 (1.2)	3 (2.1)	
₩1–2	11 (4.5)	9 (6.3)	
₩2–4	96 (38.9)	76 (53.2)	
₩4–6	85 (34.4)	39 (27.3)	
≥₩6	52 (21.1)	16 (11.2)	

Table 1. Group comparisons on demographic variables

	Non-depressed mothers Mean ±SD	Depressed mothers Mean ±SD	p-value
TV	4.2 ± 2.61	4.9 ± 2.50	0.0082
Smartphone	2.2 ± 2.25	2.6 ± 2.41	0.1067
Computer	0.6 ± 1.30	0.6 ± 1.27	0.8280
Table PC	0.9 ± 1.96	1.0 ± 1.87	0.9170
Video console	0.0 ± 0.28	0.1 ± 0.69	0.1840
Portable game device	0.0 ± 0.14	0.0 ± 0.04	0.2619

Table 2. Screen exposure Days Per Week among Toddlers of Depressed and Non-Depressed Mothers

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