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Risk and Protective Variables Related with Continuity of Infant Development at Risks

This study examined risk and protective variables related with the continuity of developmental risks among 136 infants, aged 4-10 months. Using the Denver Developmental Screening Test, 136 infants among 2978 infants in the first wave of the Korea Child Panel were classified into the developmental risk group. Among the 136 risk group infants, 45 infants stayed in the risk group (continuing risk group) and the other 91 infants moved into the normal group (recovering risk group) after 1 year. Group differences were tested in the levels of infant, mother and father variables to examine which variables were associated with the continuity of developmental risks for a year. Variables indicating parents' marital relationships such as the mothers' marital satisfaction and conflict of the first wave and the fathers' marital satisfaction of the second wave significantly distinguished the continuing from the recovering risk group. In addition, there were significant group differences in the levels of mothers' self-efficacy in the first wave. The findings suggest that the exposure to marital conflict during infancy is associated with the continuity of developmental risks.

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The first three years after birth are developmentally critical periods. Infants' developmental problems have been found to be continuous and are associated with increased risks in child and adolescent adjustment difficulties (Patterson, Capaldi, & Bank, 1989). School achievement problems (Tomblin, Zhang, Buckwalter, & Catts, 2000), social isolation, and peer rejection (Wood, Cowan, & Baker, 2002) during childhood and adolescence were associated with developmental problems during infancy. Therefore, it is important to identify factors that contribute or protect infants from the continuity of developmental risks.

Previous literature has shown evidence for the child and family factors that influence infant developmental risks. Particular interests of the current research are infants' temperament and marital relationships. According to previous studies, infants' and parents' personal variables are related with infant developmental pathology. Such variables as infants' temperament, mothers' self efficacy, depression, and marital relationships are related with infant developmental adjustment (Greenspan & Wieder, 2006; Sameroff, Seifer, Baldwin, & Baldwin, 1993).

Temperament refers to the child's behavioral style and is considered to be constitutionally based, present early in life, and stable across various kinds of situations (Bates, 1989). Fagen, Singer, Ohr, and

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Fleckenstein (1987) examined the relations between infant temperament and the Bayley Scales of Infant Development (BSID) at 4, 8, and 12 months. They found that activity level was related to BSID at each age. In addition, negative relations were found between smiling, laughter, and the mental development index at 8 and 12 months.

According to Crokenberg and Leerkes (2005), emotion-specific patterns of infant temperament are linked with specific behavioral outcomes. Distress to limits predicted externalizing problems and distress to novelty with activity predicted internalizing problems. In addition, the moderating effect of infant temperament was found in relation with internalizing behaviors. For children who were distressed and active to novelty as infants, those in more than 30 hrs of non-parental care a week at two and half years were significantly more internalizing than comparable children in non-parental care for fewer hours or not at all (Crokenberg & Leerkes, 2005). Perez-Edgar et al., (2008) assessed the relations between infant temperament, gender, and basal cortisol levels in shaping internalizing and externalizing problems. They found that high basal cortisol levels were strongly associated with internalizing behavior only in boys who exhibited high levels of negative temperament in infancy. Lengua (2002) demonstrated that children who were in low levels of effortful control or in high levels of fear and irritability experienced higher initial levels of maternal consistent discipline and rejection. Lengua also noted that declining child fear and irritability and increasing effortful control predicted lower externalizing and internalizing problems while increasing in negative parenting predicted more externalizing problems.

Children during infancy depend on the influence of their caretakers in terms of their development. Maternal self-efficacy could play an important role in affecting infant development. Mothers of clinically referred children with conduct problems showed lower levels of maternal self-efficacy than comparative community sample (Sanders & Wolley, 2004). At age 2, maternal self-efficacy was related with children's observed compliance, negativity and avoidance of mothers (Coleman & Karraker, 2003). Moreover,

maternal depression is a critical intrapersonal variable that has negative influences on infant development. Bridget and colleagues (2009) suggested that maternal depression influenced on infant negative emotional development and that steeper decreases of infant regulatory capacity contributed to negative parenting in toddlerhood.

Previous literature consistently presents associations between marital conflict and child adjustment problems. Child maladjustment is directly related with exposure to marital conflict because of child's emotional reaction to or cognitive appraisal of conflict (Cummins & Davies, 2010). Overt hostility in the marital relationship has been found to be associated with hostility in the parent-child relationships (Krishna & Buehler, 2000). In the context of marital conflict, parental hostility has been found to predict behavior problems longitudinally (Harold & Conger, 1997). Marital hostility is also likely to be linked with children's maladjustment indirectly through parent-child relationships. Previous literature has presented that parent-child hostility acts as linking mechanisms between marital conflict and children's maladjustments (Buehler & Gerard, 2002).

Past research conducted with Korean developmentally risky infants has mainly focused on investigating developmental evaluation of normal and risky infant groups. For example, Oh, Lee, and Lee (2004) explored developmental evaluation in healthy full-term, at risk preterm, and full-term infants using the K-BSID-II and found significant differences among the three groups in Psychomotor Developmental Index (PDI) and Mental Developmental Index (MDI). Park(2006) examined stability of the K-BSID-II by two measurement periods and reported higher stability of MDI among high-risk infants than normal infants while higher stability of PDI among normal infant group. Oh, Lee, Lee, and Kim (2004) examined the differences in development of preterm at risk, full-terms at risk and normal infants based on the K-BSID-II and the Korean Type Developmental Test for Infants and Toddlers. Results presented that preterm at risk and full-terms at risk showed lower levels development than normal infants in the cognitiveadaptive domain. However, there are little empirical studies examining potential risk factors that would account for the continuity of infant developmental risks.

Thus, the purpose of the present study was to investigate risk and protective variables which were related with the continuity of the developmental risks for a year. This study examined which infants' and parents' variables contributed to the distinguishment of the continuing from the recovering risk group, aged 4-10 months, after a year. Based on the previous findings, infant and parent variables which were regarded as being associated with infant developmental pathology were selected in the Korea Child Panel Data. The selected variables were classified into 3 categories such as infant, mother, and father variables. Infant variable included temperament. Mother variables included depression, marital conflict, marital satisfaction, and selfefficacy. Father variables included marital conflict and marital satisfaction. We expect the current findings are helpful for developing early intervention and prevention programs for developmentally risky children.

The research questions are as follows:

- Are there group differences in the last levels of infants' and parents' variables between the continuing and the recovering risk group infants?
- 2) Are there group differences in the current levels of infants' and parents' variables between the continuing and the recovering risk group infants?

METHODS

Participants

This research selected participants based on the first and second year data of Panel Study on Korean Children (PSKC). PSKC is a nationally representative longitudinal study conducted by the Korea Institute of Child Care and Education (KICCE). Using a multistage stratified cluster sampling method, a total of 2130 mothers of newborn babies in hospitals nationwide participated in this study. The first wave

of the data was collected in 2008 and participants were followed every year.

The participants of the current study were 136 infants (71 boys and 65 girls) who were classified into the developmental risk group in the first wave of the Korea Child Panel (Lee, Shin, & Park, 2010). Using the Denver Development Screening Test (DDST), 136 infants among 2978 infants in the first wave were classified into the developmental risk group. Among the 136 risk group infants, 45 infants stayed in the risk group and the other 91 infants moved into the normal group in the second wave after 1 year. We called the 45 infants who still stayed in the risk group in the second wave 'continuing risk group' and the other 91 infants who moved into the normal group 'recovering risk group'. The continuing risk group included 26 boys and 19 girls. The average age was 5.09 months (SD=.76) during the first wave. The recovering risk group included 45 boys and 46 girls. The average age was 5.13 months (SD=.73) during the first wave.

Measures

Infant development Denver Development Screening Test (DDST) was used to assess infant development at wave 1 and 2. DDST measures four developmental areas including gross motor, fine motor, language, and personal/social for children aged 0 to 6. Children are classified into three groups including normal, abnormal, and questionable.

Infant temperament The EAS Temperament Survey for Children (Buss & Plomin, 1984) was used to assess infant temperament. 10 items of activity level (e.g., 'My baby moves continuously.') and emotionality (e.g., 'My baby feels bad easily.') subscales were selected. Cronbach's alphas for emotionality and activity level were .75 and .85 for wave 1; .78 and .78 for wave 2.

Maternal self-efficacy The Pearlin Self-Efficacy Scale (Mainieri, 2006) was used to measure maternal self-efficacy. This scale consisted of 4 items on a 5-point Likert scale. (e.g., 'I can hardly control things that happen to me.'). Cronbach's alphas were .82 and .85 for wave 1 and 2, respectively.

Maternal depression Maternal depression was assessed by The Kessler's Depression Scale (Kessler *et al.*, 2002). Mothers reported how often they felt depressed feelings in the last 30 days. The scale included six items on a 5-point Likert scale. Cronbach's alphas were .91, . 85 for wave 1 and 2, respectively.

Marital satisfaction Marital satisfaction was assessed by RKMSS (Revised-Kansas Marital Satisfaction Scale) which was revised into KMSS (Kansas Marital Satisfaction Scale) by Chung (2004). RKMSS contains 4 items on a 5 point Liker scale (e.g., 'Are you satisfied with your husband as your spouse?'). For wave 1, Cronbach's alphas were .91 for maternal and .85 for paternal marital satisfaction. For wave 2, Cronbach's alphas were .91 for maternal and .85 for paternal marital satisfaction.

Marital conflict Marital conflict was assessed by the Marital Conflict Test (Markman, Stanley, & Blumberg, 2001). This Scale consisted 8 items on a 5-point Likert scale (e.g., 'My husband is unlikely to respect me.'). For wave 1, Cronbach's alphas were .91 for maternal and .85 for paternal marital conflict. For wave 2, Cronbach's alphas were .91 for maternal and .85 for paternal marital conflict.

RESULTS

To investigate group differences in the background

variables, χ^2 tests were conducted using nominal variables including gender, birth order, infants' history of treatment in in-patient room or intensive care unit (ICU), the existence of mothers' and fathers' rare or incurable genetic disease, occupation states, experience of physical contact with baby after delivery, and the mothers' and fathers' history of drinking or smoking, There were no significant variables showing group differences according to χ^2 tests.

Correlations among the variables at wave 1 and 2 were presented in Table 1 and Table 2 Emotionality was positively correlated with maternal self-efficacy and marital conflict. Emotionality was also negatively associated with marital satisfaction. Maternal self-efficacy and depression were significantly related with parent marital satisfaction and conflict. Moreover, maternal marital satisfaction was positively correlated with paternal marital satisfaction. Maternal marital conflict was positively associated with paternal marital conflict.

To investigate group differences in continuous variables including infants' temperament, mothers' self-efficacy, depression, marital satisfaction and marital conflict, t tests were conducted. Table 3 shows the results on group differences in the variables of the first wave. The mothers' self-efficacy, marital satisfaction, and marital conflict in the first wave were found to be significant variables to distinguish the two groups. Mothers' self-efficacy and marital satisfaction levels of the continuing risk group were significantly lower than the recovering

Table 1. Correlations Among Variables at Wave 1

| Infant Temperament | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------|---------|------|---------|---------|---------|---------|--------|
| 1. Emotionality | | | | | | | |
| 2. Activity | .164*** | | | | | | |
| Mother Variables | | | | | | | |
| 3. Self-efficacy | .204*** | 015 | | | | | |
| 4. Marital Satisfaction | 120*** | .047 | 313*** | | | | |
| 5. Marital Conflict | .159*** | 036 | .478*** | 654*** | | | |
| 6. Depression | | 045 | .554*** | 383*** | .510*** | | |
| Father Variables | | | | | | | |
| 7. Marital Satisfaction | 016 | .005 | 135*** | .385*** | 654*** | 131*** | |
| 8. Marital Conflict | .058* | 043 | .259*** | 444*** | .578*** | .258*** | 465*** |

^{*}p<.05, ***p<.001

Table 2. Correlations Among Variables at Wave 2

| Infant Temperament | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------|---------|-------|---------|--------------------|---------|---------|--------|
| 1. Emotionality | | | | | | | |
| 2. Activity | 040 | | | | | | |
| Mother Variables | | | | | | | |
| 3. Self-efficacy | .268*** | 080** | | | | | |
| 4. Marital Satisfaction | 129*** | .025 | 340*** | | | | |
| 5. Marital Conflict | .187*** | 040 | .470*** | 607*** | | | |
| 6. Depression | .268*** | 071** | .556*** | 339*** | .487*** | | |
| Father Variables | | | | | | | |
| 7. Marital Satisfaction | 074** | .053 | 203*** | .316*** | 349*** | 239*** | |
| 8. Marital Conflict | .153*** | 047 | .301*** | 386 ^{***} | .610*** | .345*** | 491*** |

^{**}p<.01, *** p<.001

Table 3. Differences in Wave 1 Variables between Continuing and Recovering Risk Groups

| | Continuing Ris | Continuing Risk Group (n=45) | | Recovering Risk Group (n=91) | |
|-----------------------------|----------------|------------------------------|------|------------------------------|--------------------|
| | M | SD | M | SD | t |
| Infant Variables | | | | | |
| Temperament: Emotionality | 2.80 | .57 | 2.74 | .55 | 61 |
| Temperament: Activity Level | 3.18 | .36 | 3.17 | .34 | 10 |
| Mother Variables | | | | | |
| Self-efficacy | 2.38 | .75 | 2.13 | .62 | -2.04* |
| Depression | 1.46 | .55 | 1.49 | .54 | .31 |
| Marital Satisfaction | 3.59 | .68 | 3.92 | .64 | 2.71** |
| Marital Conflict | 2.24 | .81 | 1.90 | .69 | -2.49 [*] |
| Father Variables | | | | | |
| Marital Satisfaction | 4.21 | .62 | 4.38 | .55 | 1.51 |
| Marital Conflict | 1.95 | .61 | 1.80 | .63 | -1.30 |

^{*}p<.05, **p<.01

risk group, whereas mothers' marital conflict levels of the continuing risk group were significantly higher than the recovering risk group.

Table 4 shows the results on group differences in the variables of the second wave. The fathers' marital satisfaction and marital conflict in the second wave were found to be significant variables to distinguish the two groups. The fathers' marital satisfaction of the continuing risk group was significantly lower than the recovering risk group, whereas the fathers' marital conflict of the continuing risk group was significantly higher than the recovering risk group.

DISCUSSION

This study examined the risk and protective variables related with the continuity of developmental risks among 136 infants, aged 4-10 months. Using the Denver Developmental Screening Test, 136 infants among 2978 infants in the first wave of the Korea Child Panel Data were classified into the developmental risk group. Among the 136 risk group infants, 45 infants still stayed in the risk group and the other 91 infants moved into the normal group in the second wave after 1 year. We call the

Table 4 Differences in Wave 2 Variables between Continuing and Recovering Risk Groups

| | Continuing Risk Group (n=45) | | Recovering Risk Group (n=91) | | |
|-----------------------------|------------------------------|-----|------------------------------|-----|--------------------|
| | M | SD | M | SD | t |
| Infant Variables | | | | | |
| Temperament: Emotionality | 2.83 | .62 | 2.75 | .62 | 71 |
| Temperament: Activity Level | 3.77 | .61 | 3.94 | .58 | 1.51 |
| Mother Variables | | | | | |
| Self-efficacy | 2.43 | .66 | 2.29 | .59 | -1.27 |
| Marital Satisfaction | 3.80 | .58 | 3.92 | .80 | .89 |
| Marital Conflict | 2.10 | .72 | 1.93 | .68 | -1.38 |
| Depression | 1.91 | .78 | 1.83 | .60 | 71 |
| Father Variables | | | | | |
| Marital Satisfaction | 4.10 | .74 | 4.38 | .59 | 2.34* |
| Marital Conflict | 2.15 | .71 | 1.89 | .67 | -2.05 [*] |

*p<.05

two groups 'continuing risk group' and 'recovering risk group', respectively. To find the risk and protective variables related with the continuity of infant developmental risks, group differences in infants' and parents' variables were investigated.

The temperament factors did not account for the continuity of developmental risks. As the current study investigated activity level and emotionality at two static time points, future research would be required to identify the developmental trajectories of temperament for the continuing and recovering risk groups over multiple measurement periods.

In the first wave, the mean level of maternal self-efficacy of the continuing risk group was higher compared with the recovering risk group. However, from infancy to toddlerhood, the level of maternal self-efficacy was found to increase significantly only for the recovering risk group. This positive change in maternal perception is likely to be advantageous in challenging situation such as parenting risky children.

Except of the mothers' self-efficacy, the significant variables which were associated with the persistent developmental risks from infancy to toddlerhood were parents' marital satisfaction and conflict. The results support previous research suggesting that exposure to negative marital conflict has been found to elicit negative reactions in children and is more broadly associated with increased risks for child

adjustment difficulties (Cummings & Davies, 2010; Rhodes, 2008). The period of infancy has been relatively understudied in the research on connections between marital difficulties and child development. As the previous findings have been extensively reported among children, the current findings provide information that such significant relationships between marital conflict and child adjustment difficulties could also be found during infancy.

Marital conflict would associate with ineffective parenting by both mothers and fathers, which worsens the negative consequences on developmentally risky infants. This process has been operationalized by the concept of spillover of negativity from the interparental relationship to the parent-child relationship (Gerard, Krishmakmar, & Buehler, 2006). According to the spillover hypothesis, negativity from marital domain is carried into parenting domain and ultimately affects child adjustment (Engfer, 1998). Parents who experience marital conflict may lack the energy or motivation to interact effectively with their children (Kaczynski, Lindahl, Malik, & Laurenceau, 2006).

In the first wave, the mothers' marital satisfaction and conflict were significant variables showing differences between the continuing and the recovering risk group, whereas the fathers' marital satisfaction and conflict in the second wave were significant variables showing group differences. Consistent with other literature on the importance of fathers, the present study suggests that paternal marital hostility was associated with infant maladjustment.

Previous literature about the transition to parenthood has revealed a decrease in marital satisfaction after childbirth. Maternal marital satisfaction seemed to decline earlier than paternal satisfaction (Wilke & Arms, 1986), because mothers become confronted with the demands of parenting infants and mothers generally undertake the majority of child care tasks. Therefore, maternal marital difficulties might negatively affect many areas of infant's functioning in the first wave. As different maternal and paternal marital conflict were linked with either the first or second wave results, further research is required to investigate the issues that paternal marital satisfaction and conflict have particularly saliency for the second wave.

In sum, mothers' self-efficacy, marital satisfaction, and marital conflict in the first wave and fathers' marital satisfaction and marital conflict in the second wave were significant variables which showed group differences. These results suggest that improving marital relationship as well as maternal self-efficacy may buffer developmentally risky infants from the potentially deleterious impact. Family and couple therapy of parents is recommended beside intervention for risky infants.

Several limitations of the current research should be noted. It should be noted that because these findings were based on t-tests, conclusions about the directionality could not be drawn. Parents who experience marital difficulties may lack the energy or motivation to interact effectively with their children. It is also possible that the stressful and demanding nature of developmentally risky infants would elicit higher marital difficulties of parents. In a future study, it would be informative to investigate this issue longitudinally to determine the direction of effects. In addition, the relative contribution of infant and parent variables as well as their interactions would need to be investigated in further research.

REFERENCES

- Bates, J. E. (1987). Temperament in infancy. In J. D. Osofsky (Ed.), Handbook of infant development. (2nd ed., pp 1101-1149). New York: John Wiley & Sons Inc.
- Bridgett, D. J., Gartstein, M. A., Putnam, S. P., McKay, T., Iddin, E., Robertson, C., Ramsy, K., & Rittmueller, A. (2009). Maternal and contextual influences and the effect of temperament development during infancy on parenting in toddlerhood. *Infant Behavior and Development*, 32, 103-116.
- Buehler, C., & Gerald, J. M. (2002). Marital conflict, ineffective parenting, and children's and adolescents' maladjustment. *Journal of Marriage and Fam*ily, 64, 78-92.
- Buss, A. H., & Plomin, R. (1984). *Temperament: Early developing personality traits*. Hisadale, NJ; Erlbaum.
- Chung, H. (2004). Application and revision of the Kansas Marital Satisfaction Scale for use of Korean couple. *Psychological Reports*, 95, 1015-1022.
- Coleman, P. K., & Karraker, K. H. (2003). Maternal self-efficacy beliefs, competence in parenting and toddlers' behavior and developmental status. *Infant Mental Health Relations*, 49(1), 13-24.
- Crokenberg, S. C., & Leerkes, E. M., (20005). Infant temperament moderates associations between child-care type and quantity and externalizing and internalizing behavior at 2 and 1/2 years. *Infant Behavior and Development*, 28(1), 20-35.
- Crokenberg, S. C., Leerkes, E. M., & Lekka, S. K. (2007). Pathways from marital aggression to infant emotion regulation: The development of withdrawal in infancy. *Infant Behavior and Development*, 30, 97-113.
- Cummings, E. M., & Davies, P. T. (2010). *Marital conflict and children: An emotional security perspective*. NY: Guilford Press.
- Engfer, A. (1998). The interrelatedness of marriage and the mother-child relationship. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families* (pp. 104-118). Oxford, England: Clarendon Press.
- Gerald, J. M., Krishnakumar, A., & Buehler, C. (2006).

- Marital conflict, parent-child relations, and young maladjustment: A longitudinal investigation of spillover effects. *Journal of Family Issues*, 27, 951-975.
- Greenspan, S. Z., & Wieder, S. W. (2006). Infant and early childhood mental health: A comprehensive developmental approach to assessment and intervention. Washington DC: American Psychiatric Publishing.
- Harold, G. T., & Conger, R. D. (1997). Marital conflict and adolescent distress: The role of adolescent awareness. *Child Development*, 68, 333-350.
- Fagen, J. W., Singer, J. M., Ohr, P. S., & Fleckenstein, L. K. (1987). Infant temperament and performance on the Bayley Scales in infant development at 4, 8, and 12 months of age. *Infant Behavior and Devel*opment, 10(4), 505-512.
- Kaczynski, K. J., Lindahl, K. M., Malik, N. M., & Laurenceau, J. (2006). Marital conflict, maternal and paternal parenting, and child adjustment: A test of mediation and moderation. *Journal of Family Psychology*, 20(2), 199-208.
- Kessler, R. C., Andrew, G., Cople, L. J., Huripi, E., Mroczek, D. K., Normand, S. L. T., Walters, E. E., & Zaslavsky, A. (2002). Short screening scales to monitor population prevalence and trends in nonspecific psychological distress. *Psychological Medicine*, 32(6), 959-976.
- Krishnakumar, A., & Buehler, C. (2002). Interparental conflict and parenting behaviors: A meta-analytic review. *Family Relations*, 49(1), 25-44.
- Lee, M., Shin, Y. R., & Park, J. A. (2010). Risk and protective factors of risk and normal infant development: Using data mining approach. 2010 Panel Study of Korean Children Conference (pp.127-138).
- Lengua, L. J. (2002). The contribution of emotionality and self-regulation to the understanding of children's response to multiple risks. *Child Development*, 73, 114-161.
- Mainieri, T. (2006). The panel study of income dynamics-child development supplement: User guide for CDS-II.
- Markman, H., Stanley, S., & Blumberg, S. (2001). Fighting for your marriage: Positive steps for preventing divorce and preserving a lasting love. New & Revised.

- San Francisco, CA: Jossey-Bass Publishers.
- Oh, M. H., Lee, I. K., & Lee. (2004). The developmental comparisons in preterms at risk, full-terms at risk and normal infants. *Korean Journal of Child Studies*, 25(5), 147-161.
- Oh, M. H., Lee, I. K., & Lee. (2005). The behavior and developmental evaluation focused on Bayley's behavioral rating scale. *Korean Journal of Developmental Psychology*, 18(1), 37-60.
- Park, H. (2006). K-BSID-II performance in normal and high risk infants: A three year longitudinal data analysis. *Korean Journal of Child Studies*, 27(1), 153-166.
- Patterson, G. R., Capaldi, D., & Bank, L. (1989). An early starter model for predicting delinquency. In
 D. J. Pepler & K. H. Rubin (Eds.), The development and treatment of childhood aggression (pp.139-168).
 Hillsdale, NJ: Erlbaum.
- Perez-Edgar, K., Schmidt, L. A., Henderson, H. A., Schulkin, J., & Fox, N. A. (2008). Salivary cortisol levels and infant temperament shape developmental trajectories in boys at risk for behavioral maladjustment. *Psychoneuroendocrinology*, 33, 916-925.
- Rhoades, K. A. (2008). Children's responses to interparental conflict: A meta-analysis of their associations with child adjustment. Child Development, 79, 1942-1956,
- Sameroff, A. J., Seiter, R., Baldwin, A., & Baldwin, C. (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Child Development*, 64, 80-97.
- Sanders, M. R., & Woolley, M. L (2004). The relationship between maternal self-efficacy and parenting practices: Implications for parent training. *Child: Care, Health & Development*, 31(1), 65-73.
- Tomblin, J. B., Zhang, X., Backwater, P., & Catts, H. (2000). The association of reading disability, behavioral disorders, and language impairment among second-grade children. *Journal of Child Psychology and Psychiatry*, 41, 473-482.
- Wikie, C. F., & Arms, E. W. (1986). The relationship of infant crying to parental stress in the transition to parenthood. *Journal of Marriage and Family*, 48, 545-550.

Wood, J. J., Cowan, P. A., & Baker, B. I. (2002). Behavior problems and peer rejection in preschool boys and girls. *Journal of Genetic Psychology*, 163(1), 72-88.

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