The Meaning of Maternal Support and its Effect on the Complexity of Play for Children with Cognitive Deficits

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ABSTRACT

- The purpose of this study is to examine the relationship between the complexity of children's play and mothers' emotional availability in children with normal vs. below average cognitive functioning.
- The participants were 87 biological mother-child dyads who were referred to Parent-Child Interaction Therapy (PCIT) for treatment of the child's disruptive behaviors. Dyads were separated into two groups based on the child's cognitive functioning level: 45 with low cognitive ability and 42 in the average range, per scores on either the K-BIT or PPVT-III.
- Mother-child interactions were coded using the Child's Play coding system (CP) and the Emotional Availability Scales (EAS, 3rd Ed.; Biringen, 2000).
- Results of analyses revealed that the relationship between mothers' passivity and time spent NOT playing differs by cognitive ability. The more passive mothers of children in the Low Cognitive group were, the less time children spent playing (i.e., the more time they spent NOT playing); while children in the Average Range spent more time playing when mothers were passive.

INTRODUCTION

- Pretend play is an important indicator of normal cognitive development. It is typically seen as early as 24 months, increasing until about 48 months, and declining as children enter school (Fein, 1981).
- Previous research at this clinic found differences in the style of children's play according to their age and cognitive ability (Dao-Tran et al., 2009).
- Warm and supportive parenting behavior is an important predictor of greater complexity in children's play (Beckwith, 1985; Fiese, 1990); and the quality of children's play is strongly related to healthy cognitive development (Smith et al., 2000).
- Studies suggest that children, regardless of cognitive differences, will show increased symbolic play if they have a sophisticated social partner during play (Cielinski & Vaughn, 1995).
- Mothers of children with cognitive deficits have been found to be more controlling and intrusive during play than mothers of cognitively normal children (Cielinski & Vaughn, 1995). However, it is possible that mothers' controlling behavior is a response to the children's greater need, encouraging more complex play.
- We do not know whether warmth and a supportive presence encourage greater complexity of play in children with cognitive deficits as it does among typically developing children.
- The purpose of this study is to examine the relationship between the complexity of children's play and mothers' emotional availability in children with normal vs. below average cognitive functioning.

METHOD

Participants

- Participants were 87 biological mother-child dyads referred to PCIT because of the child's externalizing behavior problems.
  - 58.4% boys, 41.6% girls
  - 65.5% Caucasian, 14.9% African American, 12.6% Latino, 6.9% other
- Participants were separated into two groups based on the child's cognitive level: 51.7% Low Cognitive ability and 48.3% Average cognitive ability.
  - Children were included in the study if their standard scores on the PPVT-III or K-BIT composite score were < 75 = low (N = 45), or > 99 = average range (N = 42).

Procedure

- The Peabody Picture Vocabulary Test-Third Edition (PPVT-III) and/or the Kaufman Brief Intelligent Test (K-BIT) were administered to the child by a trained professional as part of a clinical intake process.
  - Past research has found that the K-BIT composite score to be significantly correlated with the WISC full-scale IQ (Kaufman & Kaufman, 1990), a general measure of cognitive functioning.
  - The PPVT-III is a measure of receptive vocabulary in standard English and a screening test of verbal ability. The standard score is an alternative measure for IQ and has been significantly correlated with WISC IQ and K-BIT (Dunn & Dunn, 1997).
- Mother-child dyads were observed and videotaped as they played together for 15 minutes in three semi-structured play situations: Child-directed play (CDI), Parent-directed play (PDI), and Clean-up (CU). These three mother-child interaction analogs vary in the degree of control the parent is asked to wield in the interaction, assessing parents' and children's responses to different situations.
- Dyads' emotional availability was coded by two independent coders using the Emotional Availability Scales (EAS, 3rd Ed.; Biringen, 2000). The parent EA scales assess sensitivity, non-hostility, non-intrusiveness, and structuring. The child EA scales measure children's responsiveness to and involvement of the parent in play. Intraclass correlation coefficients of coder reliability were all above $r = .90$.
- The Children's Play coding system is based on a well-accepted theory of the development of play (Belsky & Most, 1981) and an empirically-supported play scale (Damast, Tamis-LeMonda, & Bornstein, 1996). In this system, the coder quantifies the frequency of the child's initiated types of play every 10 seconds for five minutes using the sequence of play development as no play, exploration, object-oriented, and imaginative play.
- The types of play were defined as follows:
  - No Play- Behaviors such as children protesting against parent's request, watching parent's play, and/or their controlling behaviors.
  - Exploration- The child explores a toy through simple or functional manipulation.
  - Object-oriented Play- The child brings together two or more objects in an uncreative way that constitutes an activity or game.
  - Imaginative Play (stages):
    - A. Enactive naming- Children appear that they are engaged in a pretense activity, but coders lack confirming evidence .
    - B. Self/other-directed pretense- Pretend play directed toward self or other.
    - C. Sequence pretense- Often links together two or more pretense actions in an appropriate way.
    - D. Substitution- Same as sequence pretense but with object substitution or role playing.

RESULTS

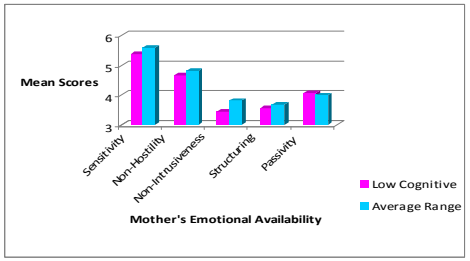
Table 1: Demographic Differences

Characteristic	Cognitive Level: Low N = 45	Cognitive Level: Average N = 42
Sex of child (% male)	60	56.8
Mean age of child (years)	4.46	4.87
Ethnicity of child (%)		
Caucasian	56.8	77.4
Latino/a	22.7	7.0
African Am.	13.6	11.6
Other	6.8	7.0
Mean age of mother (years)	26.88	28.85
Mother's education level (% attended high school or less)	83.3*	77.5*
Mother's marital status (% single)	68.2	60.5
Neglect History (%)	56.5*	40.2*
Physical Abuse History (%)	45.7	36.2
Substance Abuse (%)	71.9	46.3

* $p < .05$

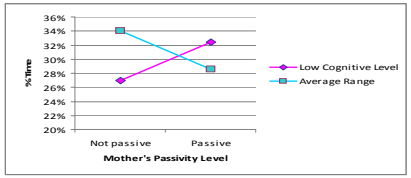
There were no significant demographic differences between the dyads in the Low and Average cognitive ability groups with the exception of mother's education level and child's neglect history.

Graph 1: Emotional Availability Scores by Child Cognitive Level



- Results showed that the only significant group differences in mothers' EA was their intrusiveness: Children in the Low Cognitive group had mothers who were more intrusive compared to mothers of children in the Average Range (F (1, 117) = 6.19, p = .014).

Graph 2: Mothers' Passivity and Amount of Time in Play by Child Cognitive Level



- The relationship between mothers' passivity and time spent NOT playing differs by cognitive ability. The more passive mothers of children in the Low Cognitive group were, the less time children spent playing (i.e., the more time they spent NOT playing); while children in the Average Range spent more time playing when mothers were passive (F (1, 86) = 3.70, p = .06).

RESULTS (CONT.)

Table 2: Correlations between Child EA Scales and Time Spent in "NO PLAY" by Child Cognitive Level

EA Scale	Cognitive Level: Low	Cognitive Level: Average
Child Responsiveness	-.36**	.01
Child Involvement	-.24	.03

** p = .012

SUMMARY OF RESULTS

1) Children in the Low Cognitive ability group were more likely to have been neglected and to have a mother with less education than children with cognitive scores in the average range.
2) Results showed that the only significant group difference in mothers' EA was in their intrusiveness: Children in the Low Cognitive group had mothers who were more intrusive compared to mothers of children in the Average Range (F (1, 117) = 6.19, p = .014).
3) We found that the relationship between mothers' passivity and time spent NOT playing differs by cognitive ability groups. The more passive mothers of children in the Low Cognitive group were, the less time children spent playing (i.e., the more time they spent NOT playing); while children in the Average Range spent more time playing when mothers were passive (F (1, 86) = 3.70, p = .06).
4) We found that the relationship between children's emotional availability to their mothers and the time children spent NOT PLAYING varied by cognitive level. The more time children in the Low Cognitive group spent NOT playing, the less emotionally connected they were to their mothers. There was no significant relationship between time spent in NO PLAY and children's EA among children in the Average Range.

DISCUSSION

- The purpose of this study is to examine the relationship between the complexity of children's play and mothers' emotional availability in children with normal vs. below average cognitive functioning who were clinically referred for disruptive behavior problems.
- We found that mothers of children in the Low Cognitive group were significantly more intrusive (see Graph 1) than other mothers. This finding supports other studies that found mothers of cognitively delayed children to be high in controlling behavior and intrusiveness (Cielinski & Vaughn, 1995), suggesting that there is a relationship to the child's cognitive level and how parents need to respond to them. Children with cognitive deficits might need more assistance in developing play skills, including higher imaginative ways of play than average children.
- While we did not find strong connections between mothers' EA and imaginative play, per se, results suggested that mothers' engagement in children's play related differently to children's overall play according to the child's cognitive ability (see Graph 2). When mothers were passive, children in the Low Cognitive group spent less time playing, whereas children in the Average group played less when their mothers were fully engaged in their play.
- Subsequent analyses showed that among children in the Low Cognitive group, the less time children spent in "NO PLAY," the more they were judged to be optimally emotionally connected to their mothers. These results suggest that the meaning of parents' passive behavior differs for children in Low Cognitive vs. Average Range groups. For children in the Average Range group, mothers' passive behavior may give children space to play autonomously and to take the initiative in the interaction, whereas for children in the Low Cognitive group, mothers' passivity may have promoted emotional detachment.

CLINICAL IMPLICATIONS

- The findings in this study suggest that parents' behavior may have different meanings for children with cognitive deficits compared to children in the average range of ability. Behavior we might normally judge to be a little intrusive may be more optimal for children with delays. It is important to observe the child's behavior (i.e., their responsiveness and attempts to engage the caregiver) when judging how best to coach a dyad in PCIT.

LIMITATIONS

- The sample of children in this study is a at-risk, clinical population; and other factors may be contributing to the findings above. Cognitive deficits may make children more vulnerable to adverse life events. Hence, maltreatment may affect children with cognitive deficits differently than children with average cognitive functioning. This differential vulnerability may mask the true connection between how play is supported by mothers and emotional availability in children with varying levels of cognitive ability.

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