Relationship Focused Intervention (RFI): Enhancing the Role of Parents in Children's Developmental Intervention

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Abstract

This article describes Relationship Focused Intervention (RFI) which attempts to promote the development of young children with developmental delays and disabilities by encouraging parents to engage in highly responsive interactions during daily routines with their children. This approach to intervention is based upon the Parenting Model of child development and was derived from research on parent-child interaction. Evidence is presented that RFI can be effective both at helping parents to learn how to interact more responsively with their children as well as at promoting children's development and social emotional function. The argument is made, that although there is no research comparing the effectiveness of RFI to interventions derived from the Educational model of child development which places less emphasis on parent involvement and stresses direct instructional activities, still the effectiveness of all interventions appears to be related to the degree to which parents are involved in and become more responsive with their children. As such RFI may not simple be an alternative model for early intervention, but may reflect a paradigm shift pointing to the effectiveness of parent involvement and responsive interaction as key elements of early intervention practice.

Keywords: Relationship focused intervention, developmental delays and disabilities, parents, young children.

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The purpose of this article is to describe the relationship focused approach to developmental intervention that has been gaining increasing usage in early intervention services for children with disabilities, especially in programs for children who are under three years of age. The description of this intervention will include the origins of this approach, its underlying conceptual framework, as well as a description of some of the more recent studies which have demonstrated its effectiveness.

The two approaches that are most commonly used to promote the development and functioning of young children with delays and developmental disabilities in early intervention are (1) enriched developmental stimulation and (2) applied behavioral analysis. The enriched developmental stimulation approach, which is commonly reflected in classroom-based early intervention programs, focuses on providing an array of experiences that are thought to be ideally suited to enhancing children's knowledge of basic cognitive concepts, such as colors, shapes, numbers and letters. It also provides children opportunities to develop their expressive and receptive language skills through group activities such as circle time (saying their names, days of the week, seasons of the year, and discussing major holidays and events), songs, and reading/story telling as well as social interaction with teachers/professionals and other children. This approach to developmental intervention evolved from the general nursery school/kindergarten movement that was initially designed to provide children from socially and economically disadvantaged backgrounds the types of experiences they were presumed to be lacking in their natural environments which were thought to necessary for the development of basic cognitive and communication skills. One of the goals of this approach is provide children the preparation they need to participate successfully in the regular elementary school curriculum.

The applied behavioral analysis (ABA) approach emphasizes structured individualized instruction that focuses on specific cognitive and linguistic skills that children may be lacking compared to typically developing children who are the same age. ABA is based upon the assumption that children's developmental delays can be conceptualized in terms of the specific cognitive, language and social behaviors or competencies that they would normally be expected to possess at their current chronological age. The remediation of developmental delays is thus accomplished by systematically teaching the specific skills and concepts that characterize each child's delays. This approach is most commonly used in clinics and classrooms, although many intervention programs encourage parents to use ABA procedures in the home environment to promote children's skill acquisition during natural, daily routines.

Both of these approaches have evolved from an "educational model" in which childhood disabilities have been conceptualized as the result of children having learning problems. Insofar as the failure of children with disabilities such as Down syndrome or autism to

acquire basic developmental skills is the result of their learning limitations, remediation has been conceptualized either as a process of providing more opportunities for these children to learn than children without disabilities might normally experience (i.e., preschool special education classrooms); or to provide highly structured learning experiences to compensate for children's learning inefficiencies (e.g., ABA). Furthermore, just as teaching basic academic and social skills can be successfully addressed in classroom or clinical settings, so too these two approaches have attempted to address the developmental learning needs of young children with disabilities in these same types of educational settings. To the extent that parents are recruited to become involved in either of these approaches, they have been asked to use the same kinds of instructional methods and learning activities at home with their children that professionals use in classrooms and clinical settings. However, parent involvement has not been considered to be essential to the effectiveness of either of these approaches. Rather, professionals have implemented these approaches as if the learning and developmental attainments that result from this form of intervention would enhance children's development by augmenting the developmental learning opportunities and supports that children naturally receive from their parents and others at home.

The relationship focused approach to intervention (RFI) represents a marked departure from these two approaches. RFI attempts to enhance the development and social emotional well being of children by focusing primarily on parents as the agent of intervention, and deemphasizing the direct instructional activities conducted by professionals in clinics or classrooms. Rather than focusing on increasing the amount of stimulation that children receive or instructing children to learn specific words and behaviors, this approach attempts to maximize the quality or effectiveness of parents with their children during daily activities and routines. RFI is derived from the "parenting model" of child development (Goodman, 1992) which asserts that parents and other caregivers are the primary psychosocial influences on the development of all children, including children with disabilities. It can be characterized as an interactional approach which views development as being influenced jointly by children's genetic makeup and biological integrity as well as by the quality of interactions and experiences that parents and other caregivers provide them during daily routine activities.

The term "relationship focused" comes from the child development research literature from which this approach was derived. During the past thirty years, child development professionals have been interested in determining how parents influence children's development and what the magnitude of this influence might be. Most of this research has addressed this issue by observing parents interacting with their children and by determining how variations in the way parents interact with, or relate to, their children contribute to children's development and social emotional functioning.

Results from this research have consistently indicated two findings. First, the kinds of experiences parents provide does account for a significant portion of the variability in the developmental outcomes that all children attain, including children with disabilities.

Parents do not cause the developmental delays of children neurodevelopmental disabilities. Rather, the genetic or biological conditions that cause children's disabilities in most cases play the greatest role in determining the developmental outcomes these children attain. Yet despite the fact that biological or genetic conditions compromise the ability of children to learn and develop, still the way parents interact with children plays an important role in contributing to the developmental outcomes children attain. In fact, the magnitude of the influence that parents have on the development of children with disabilities is comparable to the influence that parents have on typically developing children, ranging from approximately 10 to 40% of the variability.

Second, parents' level of responsiveness is one of the main factors that contribute to children's development, at least during the first five years of their lives. For example, research investigating how parents enhance their children's cognitive development has reported that compared to the other interactive qualities such as the amount of stimulation parents provide their children or the frequency that parents try to teach their children specific skills and behaviors, responsiveness is the only parenting quality that consistently predicts children's Development Age or Intelligence Quotient (IQ) (e.g., Beckwith & Cohen, 1989; Beckwith, Rodning, & Cohen, 1992; Bradley, 1989; Fewell, et. al., 1996; Landry, et. al., 1997). Moreover, neither the amount of reinforcement or praise nor types of toys or other stimulation that parents provide their children appears to influence children's rate of development, at least, as measured by standardized developmental tests.

Parental responsiveness has also been identified as the primary characteristic that influences children's communication development (Bornstein, Tamis-LeMonda & Haynes 1999; Hoff-Ginsberg & Shatz, 1982; Nelson, 1973). Children have been reported to attain higher levels of communication the more often their parents respond to their communicative behaviors and interpret their attempts to communicate as though they were meaningful. For example, Nelson (1973) compared the language development of children whose parents corrected them for using incorrect word forms to children whose parents responded to their incorrect word usage "as if it were meaningful". Children whose parents responded to incorrect language "as if it were communicative", attained higher levels of communication than children whose parents corrected them when they mispronounced or used language inaccurately.

Parental responsiveness is also associated with children's social-emotional functioning. Several studies have reported that responsiveness affects children's attachment to their parents, which is one of the most important socio-emotional behaviors in the early years of life (Birigen & Robinson, 1991; Kochanska, Forman & Coy, 1999; Vereijken, Ricksen-Walraven & Kondo-Ikemura, 1997). In addition, during the preschool years, the one parenting quality that predicts how well children get along with their peers and act independently is their mothers' responsiveness with them (Crockenberg & Litman, 1990; Isabella, 1993; van den Boom, 1995).

These findings have lead to the investigation of two questions that are the basis for relationship focused intervention. First, can intervention procedures be developed that are effective at teaching and encouraging parents to engage in more responsive interactions with their children? Second, do changes in parental responsiveness that are promoted through intervention enhance or promote children's development and social emotional well being?

1. Can intervention promote changes in parent's style of interacting with their children? Perhaps the most difficult challenge in developing relationship focused intervention was to identify procedures that could be used to promote changes in parents' style of interacting with their children. This includes both clinical and methodological challenges. Clinically, this required that professionals have a high level of sensitivity and respect for the personal and emotion-laden nature of parent's style of interacting with their children. Most parents try to interact with their children in a way that they believe is in the best interests of their child's welfare. As a result, it is only natural that parents may interpret suggestions from professionals as to how they should interact with their children as a criticism of their parenting skills. Furthermore, the way that parents interact with their children is a complex multi-determined phenomenon. Among other factors it is influenced by family, cultural and religious values and experiences. For example, parents' style of interacting with their children is almost always affected by the way that their parents interacted with them. Parents' interactions are also affected by their personality, psychological health and physical well being, as well as by their knowledge and beliefs about child development. To add to this complexity, spouses who may have different experiences, values, or knowledge of child rearing often attempt to influence each other's style of interacting with their children.

The methodological challenge was to determine the procedures that would be most effective at encouraging parents to modify how they interact with their children. At least three different procedures have been used to modify parents' interactions and to enhance their responsiveness with their children. One is to *discuss* with parents what responsiveness is and the importance of responsiveness for children's development. The second is to *model* responsive interaction with the child in the hope that by observing them parents can learn to use this style of interaction. The third is to use *interactive strategies* to (a) demonstrate how to interact responsively with a child, (b) encourage parents to modify specific behaviors while interacting with their children, and (c) provide parents feedback.

Investigators discovered that although the first two procedures may be useful in some instances, by themselves neither is effective at encouraging parents to modify their interactive behavior. Discussions about responsiveness appear to be the most ineffective. Even if parents agree with professionals about the importance of engaging in responsive interactions with children, in discussing this parents and professionals often have different notions about what responsiveness is, and such discussion seldom lead to any concrete plan of action. While modeling is more effective at helping parents

understand what responsiveness entails, it involves several steps that make it difficult for parents to change their style of interaction. It requires that parents: (1) identify from what they have observed the key behaviors they should copy; (2) incorporate these behaviors into their own interactions based upon their understanding of what these entail; and (3) identify and stop using interactive behaviors they instinctively do that interfere with their carrying out the behaviors the professional are modeling (e.g., asking too many questions, or changing play activities with which the child is involved).

The one method that has proven to be most effective is the use of responsive interactive (RI) strategies. These are brief suggestions that help to promote various interactive behaviors that are associated with responsiveness. At a minimum responsive interaction entails:

- Reciprocity- interactions that are characterized by a balanced, "give and take" relationship;
- Contingency- interactions that have an immediate and direct relationship to a child's previous behaviors that support and encourage the child's actions, intentions, and communications;
- Shared Control- guidance and direction that facilitates and expands the actions and communications which the child initiates or leads;
- Affect - expressive, animated and warm interactions that are characterized by enjoyment or delight with the child;
- Match- interactions and requests that are adjusted to the child's developmental level, interests, and behavioral style or temperament

More than 100 RI strategies have been described in various RFI curricula [e.g., Hanen (Sussman, 1999), ECO (MacDonald, 1989), Floor Time (Greenspan & Weider, 1997), INREAL (Weiss, 1981)]. These include strategies designed to promote reciprocity (e.g., Take One turn and Wait); Contingency (e.g., Respond immediately to little behaviors), Shared Control (e.g., Follow my child's lead; Playful obstruction); Affect (e.g., Interact for fun); and Match (e.g., Do what my child can do). *RI strategies* have a number of advantages for working with parents. First, they provide specific responsive behaviors on which to focus. Rather than trying to attain global goals such as interacting "more responsively", RI strategies provide mini-steps to becoming more responsive. Second, RI strategies are easy to remember, so that parents have little difficulty thinking about them while playing or interacting with their children. Third, RI strategies provide an objective standard that professionals can use to provide feedback on how parents are currently interacting with their children. Responsive interactive strategies help parents engage in more responsive interactions before this is their natural style of interacting with their children. As parents use these strategies and discover how they impact their children, they begin to understand and appreciate the implications of this style of interaction, which motivates them to incorporate them into their routine interactions.

Ultimately, repeated efforts to use these strategies results in parents developing the habit of interacting more responsively with their children.

All of the RFI studies reported to date have encouraged parents to use RI strategies similar to those described above. All of these studies have focused on the impact of RFI on children, but only a few have reported the impact of RI strategies on parental responsiveness. For example, Landry, Smith and Swank (2003, 2006) randomly assigned 264 parent-child dyads to either an RFI treatment that was conducted over a 6 month period of time to a developmental feedback intervention. The sample included both full term and very low birthweight infants who were approximately six months old at the start of treatment. While the actual ratings of mothers' interactive style were not reported, mothers who received the RFI treatment had significantly greater levels of contingent responsiveness and warm sensitivity and lower levels of restrictiveness and redirection both at the completion of intervention and at a 3 month follow-up than mothers who did not receive the RFI. Aldred, Green and Adams (2004) compared the effects of a social communication intervention which taught parents to use RI strategies to a standard treatment control group with a sample of preschool aged children with autism and their parents. After 12 months of intervention, Treatment mothers had 15% higher levels of responsiveness and lower levels of directiveness with their children than did control mothers. In two RFI studies conducted with parent-child dyads in which the children had disabilities and were under three years of age, Mahoney and his colleagues reported that global ratings of parental responsiveness increased by approximately 25% after 12 months of intervention. However, in both studies there was wide variability in the impact that RI strategies had on parents. Only 50% of a sample of 40 mothers increased their responsiveness in the first study (Mahoney & Powell, 1998); while 70% of a sample of 50 mothers increased their responsiveness in the second study (Mahoney & Perales, 2005). Thus, while research evidence indicates that RI strategies can be an effective method for encouraging parents to become more responsive with their children, there is also evidence that they are not effective with all parents.

Undoubtedly the varying levels of effectiveness of RI strategies is not simply a reflection of the validity of the strategies as intervention tools, but is also related to the varying skills of professionals at teaching these strategies to parents as well as to the different levels of parent acceptance of this form of intervention. It is important to note that for parents who are not involved in intervention, parents' style of interaction tends to be relatively stable over time (Masur & Turner, 2001). Perhaps the complex array of factors of personal and psychosocial factors that affect parenting style make this a process that is resistant to change. From this perspective, it could be argued that any significant changes in parent's interactive style promoted through RI strategies are remarkable accomplishments and underscore the power of this approach.

2. Do changes in parental responsiveness that are promoted through intervention enhance or promote children's development and social emotional well being? For the past 30 years, More than 20 RFI studies have been reported investigating the effects of

this type of intervention on behavior and rate of development of children with developmental delays and disabilities (c.f., McCollum and Hemmeter, 1997; Trivette, 2003). In general, this research has produced some very promising results. First, it has clearly established that enhancements in parents' interactions with their children, particularly as reflected in increases in responsiveness, are often associated with improvements in the quality of children's involvement or participation in interactions with their parents (Hemmeter & Kaiser, 1994; McCullom, 1984). Second, when RFI is carried out for six months or longer, it can result in improvements in both children's cognitive and language functioning as well as social emotional well being(Landry, Smith & Swank, 2003, 2006; Mahoney & Powell, 1988; Seifer, Clark & Sameroff, 1991). In the following I will describe results from an RFI study that I reported with a sample of young children with disabilities and their parents which illustrates these findings.

Responsive Teaching (Mahoney & MacDonald, 2007) is a RFI curriculum that is designed to enhance children's cognitive, communication and social emotional functioning. Similar to other RFIs, parents are taught to use several RI strategies as a means of increasing their level of responsiveness with their children during routine interactions. These strategies are taught to parents in weekly individual parent child sessions in which professionals describe and demonstrate RI strategies, and then coach parents in their use of the strategies. Interventionists often recommend that parents spend brief periods of time practicing to learn how to implement these strategies at home, yet the focus of this intervention is on encouraging parents to use these strategies during the routine interactions that they normally have while caring for and socializing or playing with their children.

Mahoney and Perales (2005) reported an evaluation of Responsive Teaching with a sample of 50 children and their parents. The average age of the children at the start of intervention was 30 months. Twenty of the children were diagnosed with Autism Spectrum Disorders (ASD) while the other 30 had a variety of neurodevelopmental delays (NDD). The intervention took place over a one year period of time during which the sample received an average of 32 RT sessions that lasted approximately one hour each.

Not only did pre-post comparisons indicate that the intervention promoted significant increases in parents' responsiveness, but it also resulted in significant and dramatic improvements in children's cognitive, communication and social emotional functioning. On average children's rate of cognitive development increased by 64% during intervention, while their rate of language development increased by approximately 150%. Intervention also had a significant impact on children social emotional functioning as measured by improvements in two standardized assessments of social emotional functioning. This effect was stronger for children ASD who were showing many more problems in this domain than children with other types of disabilities.

Overall children with ASD made significantly greater improvements in all domains than did children with NDD. However, this effect appeared to have less to do with children's diagnoses, than it did with the significantly greater improvements in responsiveness made by parents of children with ASD.

Some of the children who participated in this intervention were receiving other child directed early intervention services in addition to Responsive Teaching. Yet for the majority of children Responsive Teaching was the only intervention they received. However, the effects of Responsive Teaching on children's development were not associated with the number of other interventions they were receiving. Rather the key to its effectiveness was the degree to which parents learned and integrated Responsive Teaching strategies into their routine interactions with their children. In fact, the changes in responsiveness that parents made during intervention accounted for between 10 to 20% of the variability in the developmental improvements that children made. Children only made significant improvements in their developmental functioning when parents increased their responsiveness with them and the magnitude of their improvements were associated with how much parents increased their responsiveness. When parents were successful, children made significant developmental gains, and the magnitude of their developmental improvements were associated with the changes in responsiveness that parents made. If parents did not change their responsiveness during intervention, children made little or no developmental improvements.

RFI – "Alternative Intervention" versus "Intervention Paradigm Shift"

As described at the outset of this article, RFI is based upon a radically different conceptual framework than the majority of developmental interventions that are used with children with disabilities today. RFI is based upon the parenting model which emphasizes the importance of parents playing the primary role in intervention and promoting children's development by engaging in responsive interactions. Interventions that are based upon the educational model such as the Enhanced Developmental Stimulation and ABA approaches tend to view professionals, as opposed to parents, as the principal agents of intervention as well as emphasize instructional practices that direct and encourage children to learn higher level behaviors more than responsive interaction. An important question to consider is whether RFI is simply an alternative method for developmental intervention that is no more or less effective than other approaches, or whether RFI reflects a paradigm shift that points to processes that are absolutely critical for developmental intervention.

Unfortunately, at this point, studies that could be used to address this question comparing the relative effectiveness of RFI to evidence based interventions based upon the educational model have yet have yet to be reported. However, Mahoney and colleagues have reported two studies that suggest that the factors that are targeted in RFI, parent mediated intervention and responsive interaction, play a critical role in a wide range of interventions.

In one study, they conducted a secondary analysis of 629 children and their parents who had participated in four different early intervention research studies (Mahoney, et. al., 1998). The sample included 298 parent child dyads from the Infant Health and Development Program (IHDP) (Brooks-Gunn, et. al., 1994); 238 dyads from the Longitudinal Studies of Alternative Types of Early Intervention (White & Boyce, 1993); 42 subjects from the Play and Leaning Strategies Program (PALS) (Fewell & Wheeden, 1998), and 47 subjects from the Family Centered Outcomes Study (Mahoney & Bella, 1998). The common elements of these four intervention studies were that children began participating when they were under three years of age, and observations of parent child interaction were collected that could be used to determine how the effects of intervention were associated with mothers' style of interacting with their children. In all four studies, mothers' style of interacting with their children was assessed with the same instrument, the Maternal Behavior Rating Scale (Mahoney, 1992)

These interventions differed from each other in terms of the developmental disabilities and risks of the children that were involved as well as the types and intensity of intervention services children received. The IHDP was an intensive and comprehensive intervention derived from the educational model that involved low birthweight children and their parents. This intervention was initiated when children came home from neonatal intensive care units and continued until children were three years old. The first year of this intervention consisted primarily of weekly home visits in which parents received information about play activities they could do to support their children's development. During the second and third years, parents continued to receive monthly home visits, while children also received a high quality preschool experience for 25 hours each week.

The Longitudinal Studies were conducted with children with disabilities who were enrolled in early childhood special education programs. This multi-site study compared different iterations of interventions derived from the educational model (enhanced classroom interventions) versus standard practice classroom interventions. Children received from 2 to 5 days per week of early intervention services. In some cases, parents also received parent education classes related to how to manage their children at home. Since none of the early intervention enhancements varied in terms of their impact on children's development (White & Boyce, 1993), in this study, children who received enhanced classroom interventions were compared to children who received standard early intervention services.

The PALS project was an RFI that evaluated the effects of a three month parenting intervention (24 sessions, 30 minutes each) that was designed to teach teenage mothers how to engage in more responsive interactions with their typically functioning children. The Family Service Outcomes Study examined the impact of the family support services that were provided during weekly intervention sessions on children with disabilities who were enrolled in early intervention programs over a 12 month period of time.

Data analyses investigated how improvements in children's developmental functioning were associated with mothers' style of interaction. In two of the studies, IHDP and PALS, intervention had a statistically significant effect on children's development. In addition, in both of these studies, mothers increased their level of responsiveness with their children during intervention. In the IHDP, mothers' responsiveness at 30 months was significantly associated with the gains that children made during intervention. In fact, mothers' responsiveness accounted for approximately 20% of the variability in children's rate of development when they were 24 and 36 months old, while the intervention services that children and parents received (e.g., home visiting and preschool) accounted for only 4% of the variance.

In the PALS program, after three months of intervention the children in the treatment group attained developmental quotients that were 9 points higher than children in a no-treatment contrast group. In addition, consistent with the focus of this intervention, the responsiveness of mothers in the treatment group was significantly greater for treatment mothers than for mothers in the contrast group. A regression analysis that examined the contributions of children's development at pretest and mothers' responsiveness at post-test to the developmental status of children at the end of intervention indicated that mothers' responsiveness was the only significant predictor of children's development, accounting for 10% of the variance.

In the other two studies, Family-Centered Outcomes and the Longitudinal Studies, there were no significant changes in children's rate of development during intervention. In the Family Centered Outcomes study, children's developmental quotients changed from 62 at pretest to 63 at posttest; while in the Longitudinal Studies developmental quotients for children in both the Expanded and Typical treatment groups were 67 at pretest and 68 at posttest. In addition, in both of these studies there were no significant pre- post- changes in mothers' responsiveness with their children. It is interesting to note that even though mothers' responsiveness did not change during the Longitudinal Studies, intervention, mothers' responsiveness was the only factor that was significantly associated with children's rate of development both at the beginning and end of intervention. Neither the type nor intensity of intervention services children received in this project had any influence on the rate of development children attained during intervention.

In the second study Mahoney and colleagues (Mahoney, Wheeden, & Perales, 2004) examined the impact of preschool special education that was based upon the Educational model over the course of one school year on a sample of 70 children with disabilities. These children were between 3 to 5 years of age (Mean Chronological Age = 41 months) at the beginning of the school year and had moderate levels of developmental delay [Mean Developmental Quotient = 59 (Bayley Scales of Mental Development)]. The children came from 41 classrooms which operated 4 half days each week for a total of 36 weeks. We classified these classrooms according to the type of instructional model teachers were implementing. Approximately 27 children were receiving services in developmentally oriented classrooms in which teachers focused on providing

developmentally appropriate activities in child selected play and instructional activities; 15 children were receiving services in which teachers focused on didactic instruction related to children's individualized educational objectives in teacher directed individual and group activities; and 28 children received naturalistic intervention services in which teachers blended child selected developmental activities with teacher directed instructional activities. We then examined the impact of these instructional models on children's developmental growth and parents' style of interaction. Results indicated no significant improvements in children's developmental functioning over the course of this intervention. Children's developmental quotients averaged 59 at the beginning of intervention and 60 at the end of intervention. While the three types of instructional models clearly affected the classroom experiences children received, there were no differences between these models in terms of their impact on children's development. Pre- post comparisons also indicated that parents' style of interacting with their children did not change during the course of the school year. This result was not surprising, because these preschools had little if any direct involvement with parents and they made no efforts to influence parents' interactions with their children. Despite this, parents' level of responsiveness with their children was the only variable that was associated with children's development at the end of intervention. That is, while the preschool classroom experience had no effect on children's development regardless of the type of instructional model that was used, parents' level of responsiveness accounted for 10% of the variability of their children's developmental quotients.

Overall these findings, which are based studies of nearly 700 children and their parents, provide evidence that is highly supportive of the principles of the parenting model which is the conceptual framework for RFI. They suggest that: (1) parents are the major influence on their children's development even when their children participate in intervention: and that (2) the effectiveness of intervention is highly associated with parents becoming more responsive with their children during the course of intervention.

Children's rate of development while they participated in these interventions was highly associated with how responsively their mothers and other primary caregivers interacted with them. Responsiveness had a much stronger relationship with children's rate of development during intervention than did the services that children received, regardless of the type or intensity of these services. Intervention appeared to accelerate children's development when it enhanced mothers' responsiveness. When interventions did not affect mothers' responsiveness, children's rate of development during intervention was comparable to their rate of development prior to intervention, which was also associated with mothers' responsiveness. The effects of mothers' responsiveness on children's development during intervention appeared to occur with all children, and did not vary according to the nature or etiology of children's developmental disabilities.

These results suggest that developmental interventions that are based upon the educational model can augment the effects that parents have on their children's development; but that even when these interventions are high quality and intensive, their

influence is still not as great as the influence that parents have on their children. For example, the centerpiece of the IHDP was the 25 hour per week high quality preschool experience that children received when they were between 12 to 36 months of age. Yet results from our analyses indicated that improvements in parents' responsiveness, which were an unintended consequence of the home visiting component of the IHDP, accounted for nearly five times more variability in children's developmental outcomes than the high intensity preschool experience. However, our results also indicate that high quality child directed intervention services do not impact children's rate of development if they do not also enhance the effectiveness of parents. In both the Longitudinal Studies as well as in the investigation preschool special education classes reported by Mahoney, et. al., 2004, intervention did not enhance the effectiveness of parents at interacting with their children. In both studies, regardless of the quality and intensity of the child directed services, children failed to show improvements in their rate of development during intervention.

Summary

In this article, I have described relationship focused intervention which attempts to promote the development of young children with developmental delays and disabilities by encouraging parents to engage in highly responsive interactions during normally daily routines with their children. I described how this approach to intervention is based upon the parenting model and how it is related to research on parent-child interaction. I presented evidence that this approach to intervention can be effective at helping parents learn how to interact more responsively with their children. I also presented evidence that changes in parental responsiveness that are promoted through RFI can have a significant impact on children's behavior and rate of developmental functioning.

I contrasted RFI with prevailing early intervention approaches derived from the educational model. Interventions derived from the educational model tend to be implemented primarily by professionals and emphasize directive instructional practices. In contrast, RFI focuses on parents as primary interventionists and encourages the use of responsive interaction as a means of promoting children's development. Although these two intervention models have not been compared directly, research was described which indicates that improvements in parental responsiveness are the key to intervention effectiveness, regardless of whether the intervention is based upon the educational model or any other model of child development. These findings suggest that RFI is not just another alternative intervention model; but rather is a paradigm shift in early intervention, particularly related to the principles of parent involvement and responsive interaction. While RFI is a viable and exciting method for providing early intervention, there is great need to continue to investigate the role of parent involvement and responsive interaction in early development intervention.

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