

Early Childhood Intervention: Evolution of a System

Michael J. Guralnick



The difficulties faced by parents of young children with general developmental delays seemed nearly overwhelming only 25 years ago. The general absence of a coherent, sensitive, and responsive system of early intervention services and supports for young children with developmental delays meant that few families during that period had the resources necessary to help manage the complex and often stressful circumstances they encountered (Gorham, Des Jardins, Page, Pettis, & Scheiber, 1975). Even the limited services that were available for young children with developmental delays were rarely organized and integrated in a meaningful way. In essence, the burden was placed on families to seek out knowledgeable professionals and to integrate the health, educational, and social services and supports that were required.

Kathryn Gorham (then Director of Community Relations for the Montgomery County [Maryland] Association for Retarded Citizens—now Montgomery County Arc) and her colleagues reflected the views of parents 25 years ago:

The services available to handicapped [sic] children today are short in supply and low in quality or, worse, dehumanizing, as are most of our institutions. Since parents encounter a gulf of non-assistance as they look for services in their communities, it is inevitable that they will feel the message: Society does not view their children as worthy of investment; in fact, it disdains those with certain handicaps. The parent, in turn, feels devalued and often is as he proceeds about the business of looking for help for this child. (Gorham et al., 1975, pp. 154–155)

The shortage of well-trained professionals, particularly those trained within an interdisciplinary framework, created problems for families at every turn. The diagnostic and assessment process was often unsatisfactory, repetitive, and ambiguous, frequently resulting in multiple labels leading nowhere. Parents were hardly partners with professionals in this process, and had to become unusually assertive to have input in any form. Moreover, when communication between parents and professionals did occur, it often took the form of professionals communicating low expectations about the child's development and placing arbitrary limits on long-term independence. Thoughtful consideration of family strengths and needs was unusual. When early

intervention services were available, they were inevitably provided in segregated settings, contributing further to the growing sense of isolation from the larger community experienced by many families and their children. Finally, there was limited appreciation of the broad developmental and ecological forces, including stressors, that influence the development of children, and of the fact that these forces act in a similar fashion irrespective of a child's disability. This emphasis on "difference" was a pervasive one, further reinforcing the social isolation of families and establishing a barrier to creative solutions to problems that may have emerged from the larger community of child development professionals.

Before any thoughtful system of early intervention services and supports can be established, it is essential to understand the stressors facing families that can adversely affect a child's development. In many respects, progress in developing an effective early intervention system during the past 25 years has paralleled recognition of these family-related stressors and their impact on child developmental outcomes. In this chapter, I attempt to characterize these stressors, evaluate their impact on the development of children with primarily general developmental (cognitive) delays, and examine the emergence and effectiveness of the contemporary early intervention system as a response to those stressors. In the final section, I discuss some of the work that remains to be accomplished in the field of early childhood intervention, addressing both the acquisition of new knowledge and the implementation of existing knowledge.

FRAMEWORK FOR EARLY INTERVENTION

Stressors Affecting Families

The potential stressors confronting families created by the presence of a young child with a developmental delay are now thoroughly appreciated. Although there are many ways to organize these stressors, four interrelated components can be identified (Guralnick, 1997c, 1998). First, families must seek out and make sense of an enormous amount of information. Resolving issues surrounding the diagnostic process, addressing their child's health concerns, struggling to identify capable professionals and programs, and sorting through and coordinating professionals' recommendations and therapeutic activities all constitute significant challenges for families. Information is needed at many levels, not the least of which is guidance with respect to the day-to-day parent-child questions and problems that arise as part of routine child-rearing experiences. For example, parents wish to understand what adjustments are needed when their child displays substantial unevenness in the various domains of development (e.g., unusually limited expressive language), how to manage attentional or behavioral difficulties, or how to interpret behaviors not observed in their child's siblings. Navigating through this "crisis of information" and searching for a coherent array of services and supports for their child can produce substantial levels of stress (Hanson & Hanline, 1990; Sontag & Schacht, 1994).

Second, interpersonal and family distress is often experienced. The diagnostic and assessment process is extraordinarily stressful and can easily challenge a family's coping resources (Turnbull et al., 1993). Moreover, the meaning and impact of a diagnosis of a child with a disability often differ between mothers and fathers, as does the process related to reevaluating child expectations and family functioning that often follows. This process and the differing perspectives within the family can result in interpersonal and family distress and may contribute as well to a pattern of increasing social isolation (e.g., Hodapp, Dykens, Evans, & Merighi, 1992). Furthermore, a shared stigma (Goffman, 1963) can arise, creating problems of self-esteem and a tendency of the family to withdraw from different aspects of their support system. Unquestionably, even in the absence of an early intervention system, many families adapt well to these circumstances, drawing upon personal and material resources. Nevertheless, unresolved interpersonal and family distress characterizes a substantial number of families of children with developmental delays.

Third, additional stress is placed on existing family resources. The need to alter usual family schedules and routines and the time and energy required to identify various therapeutic services and transport their child to these services complicates matters for busy families. A need for respite care or for assistance with siblings tends to increase as well. Parents may also delay returning to work to accommodate these additional responsibilities (Kelly & Booth, 1997). As a consequence of this lost income, as well as added financial responsibilities related to the care of their child (Birenbaum, Guyot, & Cohen, 1990), considerable stress on a family's resources is common.

Fourth, these three classes of stressors threaten the very essence of sound parenting—that is, the ability to maintain a sense of control, confidence, and mastery over the persistent and often surprising parenting challenges. This personal sense of loss can be devastating and may have widespread adverse effects on relationships with all family members.

Impact of Stressors

Having identified these four potential types of stressors, it is important to examine not only their impact on a child's development but also, and more important from the perspective of early intervention, the mechanisms through which these stressors operate to create adverse influences on child development. One approach is to consider stressors in the context of a developmental model of child development (Guralnick, 1998). As indicated in Figure 3.1, it is suggested that stressors exert their influence on child development by disturbing one or more of three cardinal *family interaction patterns*. Of course, stressors associated with a child's disability are not the only factors that influence family interaction patterns. As discussed in a later section, a number of *family characteristics* unrelated to a child's disability are also vital and can either mitigate or exacerbate those stressors linked to circumstances associated with a child's disability.

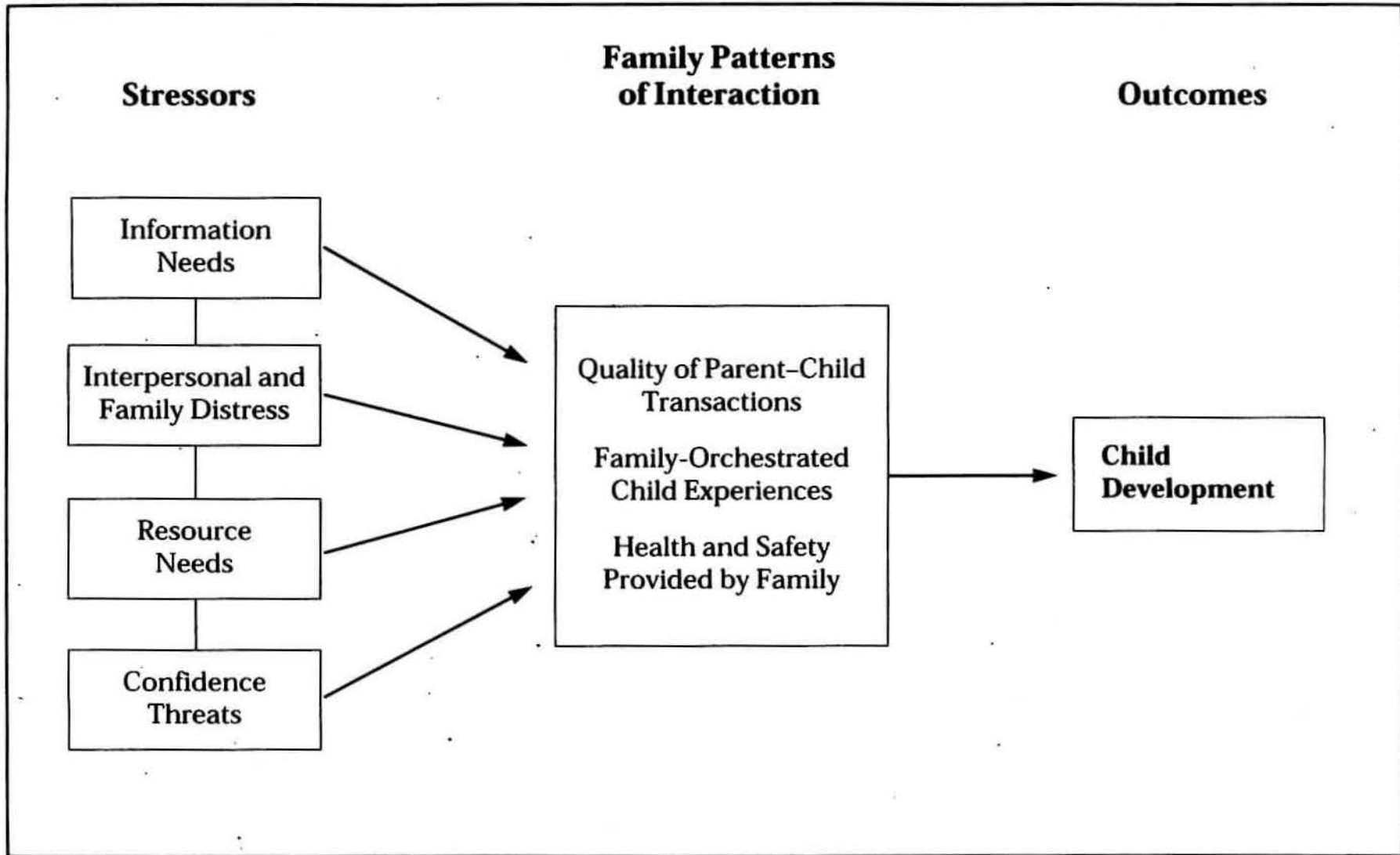


FIGURE 3.1. The relationships among stressors, family patterns of interaction, and child developmental outcomes.

Emphasized here, however, are the effects of stressors uniquely created by the presence of a child with a disability on family patterns of interaction.

First, stressors can operate to alter the quality of parent-child transactions. Of note, these proximal patterns of parent-child transactions have been carefully investigated, constructs have been defined, and associations with child developmental outcomes for all children have been well established. These relationship constructs include those related to ensuring contingent responding, establishing reciprocity, being nonintrusive and affectively warm, providing developmentally appropriate exchanges, and being discourse based (e.g., Baumrind, 1993; Clarke-Stewart, 1988; Wachs, 1992). However, any of the four types of stressors created by a child with a disability discussed above can create circumstances in which less than optimal parent-child transactions take place. Stressors related to information needs are perhaps most influential. For example, the absence of information with respect to how best to read their child's cues, how to interpret the child's inability to exhibit emotional expressions that bond child and parent together, or how to establish joint attention to foster receptive language can all contribute to a nonoptimal quality of parent-child transactions. Similarly, if interpersonal and family distress persists, parents are less likely to be able to build an ideal affective relationship with their child. Of course, sufficient financial and other resources must be available to allow families to devote the time and energy necessary to establish optimal family interaction patterns.

The second family pattern of interaction that can be affected by stressors consists of those experiences of the child occurring within the larger physical and social environment organized by their parents. These include such fundamental parenting activities as selecting appropriately stimulating toys and providing outside activities that consider their child's unique interests or special needs. It also includes introducing their child to adults in their own social network or efforts to arrange peer contacts for their child in order to encourage the development of a peer social network. Finding alternative care arrangements also constitutes an important aspect of these family interaction patterns as these choices, activities, and other family-orchestrated experiences are all associated with important child development outcomes (e.g., Bradley, Rock, Whiteside, Caldwell, & Brisby, 1991; Guralnick, *in press*; Ladd, Profilet, & Hart, 1992).

As in the case of the quality of parent-child transactions, stressors from various sources associated with a child's disability status can adversely affect family-orchestrated child experiences. For example, interpersonal and family distress can create a tendency toward social isolation, thereby limiting the child's experiences substantially. Similarly, the absence of adequate information about the most effective early intervention programs, combined early intervention and day care settings, or most advanced specialized therapeutic interventions can limit child developmental outcomes. This complex pattern of family-orchestrated child experiences is vital to optimal child outcomes, but can be influenced by stressors in quite subtle ways.

Third, parents are responsible for ensuring the health and safety of their child. Providing adequate nutrition, obtaining immunizations on schedule, and organizing a

safe environment for play and physical growth are, of course, essential ingredients for optimal child outcomes (Gorman, 1995; Osofsky, 1995). Although related family circumstances such as poverty play a major role, as they do in other family interaction patterns, the presence of a child with a disability adds a new dimension that can further stress available resources. Proper nutrition is particularly susceptible to these stressors. Apart from financial demands, child health problems often create a need for information regarding dietary requirements or feeding techniques that is quite complex.

Accordingly, it appears that the four types of stressors discussed (information needs, interpersonal and family distress, resource needs, and confidence threats) exert their influence on child development by perturbing one or more of the three family patterns of interaction. When this occurs with sufficient magnitude, child developmental outcomes are likely to be compromised. In fact, it is now recognized that, in the absence of efforts to mitigate these stressors—that is, the absence of early intervention for children with developmental delays and their families—we can expect to see a gradual decline in children's intellectual development across the first 5 years of life (Guralnick, 1998; Guralnick & Bricker, 1987). These declines are of an order of magnitude of .5 to .75 standard deviation (8 to 12 IQ points). Of course, delays in development would still exist if these further declines did not occur. However, the continuing declines may well be attributable to nonoptimal family interaction patterns, and substantial benefits to children and families would result if these declines could be prevented or minimized through early intervention programs.

THE EARLY INTERVENTION SYSTEM

In the past 25 years, remarkable advances have occurred in the field of early intervention that have gradually produced an effective system of early intervention services and supports. At one level, advocates such as Gorham et al. (1975) and parent groups across the country successfully lobbied for legislation in support of early intervention. Unquestionably, most significant was Public Law (P.L.) 99-457, the Education of the Handicapped Act Amendments of 1986, encouraging a comprehensive program for infants and toddlers and virtually assuring services for preschool-age children. Support for programs for young children with disabilities was also found in other legislative developments, such as the maternal and child health program (Hutchins, 1994; Richmond & Ayoub, 1993). Paralleling these and other legislative changes was the emergence of interdisciplinary training programs, particularly for physicians and other health professionals; the development of model early intervention programs; the creation of dissemination networks; and similar activities (see Smith & McKenna, 1994). Additionally, dramatically increasing knowledge of the capacities of infants and toddlers, emerging developmental models emphasizing the importance of family patterns of interaction regulating child outcomes, and behavioral and neurobiological research emphasizing the disproportionate influence of the first few years of life and the plas-

ticity of development during that period all converged to form a foundation for the creation of an effective early intervention system (see Guralnick, 1997a).

Over time, this system evolved in a manner that has progressively become more and more responsive to the stressors facing families. Three components of what now can be referred to as a true early intervention system can be identified (Guralnick, 1997c). First, most communities have established a series of *resource supports* that have facilitated an awareness of, access to, and the coordination of comprehensive services. In addition, supplemental supports in the form of financial assistance and respite care are also available. Together, these resource supports mitigate important stressors and therefore permit families to devote their attention and energies to more productive activities to create optimal family interaction patterns.

Second, most communities now have established a well-organized yet informal set of *social supports* for families, including parent-to-parent groups, family counseling services, and ways to help mobilize family, friend, and community networks as needed. These social supports constitute a powerful means of alleviating interpersonal and family distress. Parent-to-parent groups, in particular, are an important source of information for just about any topic, as these organizations have acquired a vast amount of knowledge based upon personal experiences of members with their own children and families, as well as experiences with professionals, programs, and policy makers.

Third, virtually all communities provide an array of *information and services*. Most prominent perhaps is the home- or center-based formal early intervention program available to children with developmental delays organized in a manner consistent with existing federal and state legislation. The total amount of time children and families participate in these formal programs varies with the child's age, usually only a few hours a week for infants and toddlers and a few hours a day for preschool-age children. But even for infants and toddlers, these programs provide an important "centering" function, serving as a meeting place for parents and children and as a place in which services are provided to the child, to the parent, or to the parent-child dyad. In fact, to the extent that these programs address family needs, they also encourage the development of social supports (Thompson et al., 1997).

Most formal programs also have a "curriculum," and the consistency with which such a curriculum is implemented and its organizing features appear to be the reasons why they are most beneficial (Shonkoff & Hauser-Cram, 1987). But parents also seek out relationships with professionals outside the formal early intervention program. This includes the child's primary care physician, and possibly specialists from other disciplines as well. It is in this context that additional health and safety issues are discussed, anticipatory guidance is provided, and supplemental child-focused individual therapies implemented. Clearly, the benefits of information and services provided through involvement with community professionals can mitigate a number of stressors. Together, however, it is the early intervention system composed of resource supports, social supports, and information and services that contributes to parents' growing confidence that they can retain control of and be effective in their caretaking role. In a real sense, parents' confidence grows with the recognition that, despite stressors

associated with their child's disability, they are still able to engage in high-quality parent-child transactions, orchestrate their child's experiences so as to maximize developmental outcomes, and ensure the health and safety of their child.

When these community-based early intervention programs are in place, the decline in intellectual development observed for children with developmental delays during the first few years of life noted earlier is either prevented entirely or substantially reduced (Guralnick, 1998; Guralnick & Bricker, 1987). These well-documented findings reinforce the value of considering all children within a developmental-ecological framework, and validate the central role families must occupy in the early intervention system.

The accomplishments of the field of early intervention over the past quarter century, in what is generally referred to as the "first generation" of programs and related research, have indeed been remarkable. It is a system that we can all be proud of, as the evolution of early intervention programs has permanently altered our way of thinking about the forces that influence development for all children. Nevertheless, many issues remain to be addressed in the years ahead in order to build upon this important foundation. The remainder of this chapter is devoted to consideration of these future directions.

FUTURE DIRECTIONS IN EARLY INTERVENTION

In this section, I outline those early intervention issues that I see as most critical for the future. Two types of issues are considered. The first are those areas that require new knowledge gained through research or systems enhancements gained through program development. The second are those areas in which knowledge is available or systems already developed, but implementation has not occurred adequately. These issues range widely but, if considered in the context of the research, training, and practice enterprise of the early intervention system, can yield significant advances in the decades ahead. Specific issues to be addressed include children's social development, the inclusion of young children in the larger community (especially child care), the concept of specificity and individualizing interventions for children and families, the long-term effectiveness of early intervention, families facing unusual environmental stressors, ensuring family-centered programs, and the problem of quality in early intervention programs.

Knowledge and Systems Development

Social Development

Many aspects of early intervention programs, particularly the more didactic features, have emphasized children's primary disabilities. Figuring out how to promote cognitive and language development, particularly for children with general developmental

delays, has been and continues to be a high priority for parents and professionals. However, this very understandable domain-specific interest has been accompanied by the relative neglect of more integrative aspects of early childhood development, particularly social development. Of special interest is the ability of children to establish productive relationships with their peers and to develop friendships. It is well recognized that the quality of one's later life is inextricably linked to interpersonal skills that develop in the peer context. Less recognized, however, is the importance of the early years in establishing a foundation for peer-related social competence, and that failure to do so places children on a nonoptimal developmental trajectory that is extremely difficult to alter at a later point.

Perhaps one reason for the relative neglect of children's social development is the expectation that improvements in cognitive and language development or the benefits obtained from many of the supports and services that are part of early intervention programs will promote social development as well. After all, there is every reason to believe that the three family patterns of interaction that have been linked to children's cognitive development (see Figure 3.1) are also relevant to children's social development (Patterson, Vaden, & Kupersmidt, 1991).

As reasonable as these expectations are, consistent findings have revealed that, despite participation in early intervention programs, young children with developmental delays display an unusual pattern of difficulties in the area of peer-related social development. Compared to children without delays, even when controlling for developmental level, young children with developmental delays exhibit lower levels of sustained socially interactive play; engage in higher levels of isolate play; display more negativity and discontent during play, especially during conflicts; have less success in gaining response to their social bids; are less directive; and exhibit an unusual and fragile developmental progression over the early childhood years (see Guralnick, 1999a; Guralnick & Neville, 1997). Of perhaps greatest concern is the very limited number of reciprocal friendships formed during this time (Buysse, 1993; Guralnick, 1992). The seriousness of these difficulties is underscored by the fact that socially competent interactions with peers require children to have the ability to formulate and carry out their interpersonal goals such as entering play, resolving conflicts, or maintaining play. It is these social skills that constitute the essence of independent decision making about important aspects of children's (and later adults') lives.

Why these unusual patterns exist is likely due to numerous factors, including child characteristics related to corresponding difficulties in information processing, attentional and planning processes, or expressive language. However, simply identifying these child-related cognitive and language characteristics in the absence of a conceptual framework linking it to peer-related social competence does little to advance our understanding of social development or help in the design of intervention programs.

Fortunately, recent theoretical and empirical advances have brought about a recognition that social development is an integrative domain involving a dynamic set of interacting processes. Foundation processes consist of a shared understanding of social rules or the event structure of play themes and the ability to regulate one's

emotions during social play. Also important are social-cognitive processes related to the child's ability to properly attend to relevant cues in the social environment related to the child's interpersonal goals, interpret those cues appropriately, generate a positive array of responses to the situation, and, based on contextual information, evaluate and select a reasonable response. Finally, higher order processes that relate to sustaining and monitoring goal-oriented events over the sequence of exchanges are also critical.

To be sure, these integrative processes are affected by children's cognitive, communicative, and behavioral problems associated with their general developmental delays. For example, difficulties in working memory, particularly those related to play scripts (Bray, Fletcher, & Turner, 1997), can adversely affect key integrative processes underlying peer-related social competence. Beyond these more intrinsic child characteristics, experiential factors, particularly family interaction patterns, can also substantially influence these integrative peer-related social competence processes. For example, perhaps being preoccupied with other matters, such as devoting time to individual therapies, or due to difficulties in arranging play activities for their child, many parents of children with developmental delays find it difficult to foster the development of their child's peer social networks. The consequence of this is to limit experiences with peers that are necessary for trial-and-error exchanges that promote their child's peer-related social competence (Guralnick, 1997b). Moreover, many parents of children with delays, though highly valuing the development of children's social competence, tend to believe that their child's social skills with peers depend more on traits or enduring dispositional factors than on experiential processes and see only a relatively small role for adult facilitation. These beliefs and attributions are certain to dampen enthusiasm for directly addressing issues of social development. Finally, certain parent-child transaction patterns related to issues of control or emotion-regulating forms of play that are associated with peer-related social competence (e.g., physical play with father) often pose special problems for families of children with delays. These family-related patterns place many young children at an additional disadvantage with respect to developing peer-related social skills (see discussion by Guralnick & Neville, 1997).

Accordingly, to further enhance early intervention programs, future programs must bring to families comprehensive and validated approaches to promote children's peer-related social competence. Success has been hard to achieve in the limited work carried out so far, and it has tended to be narrowly focused and to not consider the important processes that appear to govern peer interactions. Clinical tools are needed that organize assessment and intervention within a social task or interpersonal goal framework. Child-focused interventions must be able to adapt to or enhance the processes that limit the full social development of children with delays. Success, however, will require a comprehensive approach closely involving families, including interventions to promote peer social networks, to develop reasonable attitude and belief systems regarding the causes and malleability of their child's social development, and to learn how to optimize parent-child transactions most relevant to peer competence. Such curricula and programs are now being developed and evaluated (Bruder,

1997; Guralnick & Neville, 1997), but will require close cooperation among researchers, practitioners, and families.

Inclusion in Community Life

The concept and practice of including children with and without disabilities in all aspects of community life has been one of the most important themes in the field of developmental disabilities in general and early intervention in particular (Guralnick, 1978, 1990). From an ideological perspective, experiences in inclusive settings during the early childhood years are capable of forming a foundation that fosters a sense of belonging to a common community, of encouraging respect for individual differences, and of ensuring equal access for all children and families. By establishing these values and principles at the outset, families come to expect to participate fully in all aspects of community activities. In fact, it is anticipated that well-designed, inclusive early education and early intervention programs will promote social integration—that is, positive peer relationships and even friendships between children with and without disabilities. From a developmental perspective, research has revealed many benefits of full participation in inclusive early childhood programs for children with delays, particularly increased levels of social interaction. Of equal importance, no adverse effects have been found for children with or without disabilities.

Parents of children with and without disabilities express strong support for the benefits of inclusive programs for young children, particularly promoting acceptance of children with disabilities (Bailey & Winton, 1987; Guralnick, 1994). Concerns are also evident, however. Some concerns relate to implementation issues to be discussed later, such as the availability of special services and trained personnel. Others relate to the consistent and certainly troublesome issue for parents regarding the possible social rejection of their children by their peers in inclusive programs. This is unquestionably a legitimate concern, as research has shown that children with developmental delays, even those with mild delays, find themselves socially separated in inclusive settings. Although frank rejection occurs on occasion, most often separation takes the form of exclusion. Moreover, social separation is most apparent for more demanding forms of relationships such as friendships.

How, then, is it possible to alter this social separation of children in inclusive early childhood settings in the future? After all, building social relationships and selecting friends are such highly idiosyncratic and personal matters that it is hard to imagine both the appropriateness of trying to change children's perspectives of social relationships or social partners as well as our ability to do so. In fact, to date, despite our best efforts to foster social integration and further encourage acceptance of individual differences in the context of inclusive programs during the preschool period, we have not been able to materially alter the level of social separation that exists (Guralnick, 1999b).

It appears that two powerful forces are operating that tend to press for social separation. First is the existence of the peer-social competence problems experienced by

children with delays discussed in the previous section. This is clearly a significant barrier to productive social relationships. By developing effective intervention programs to address these peer interaction difficulties, we can expect to see improvements in social integration as well. However, the second force may be even more difficult to alter, as it relates to the expectations or perceptions of typically developing children and their families with regard to children with disabilities that they bring with them when entering preschool or child care programs. Unquestionably, major gains have occurred in the past 25 years in the general population with respect to positive parental attitudes toward people with disabilities, their acceptance of or even celebration of diversity, and their willingness to encourage specific experiences with children with disabilities. However, circumstances are still far from ideal, and many subtle as well as obvious negative messages are regularly communicated to and about people with disabilities within home and community settings (Stoneman, 1993). Moreover, these well-entrenched prior expectations are often reinforced by continuing experiences even when contact with children with disabilities occurs. As a consequence, meaningful participation in inclusive preschools is not likely to substantially alter a well-established pattern of behaviors.

What, then, can be done to alter these prior expectations in order to ensure a greater degree of inclusion during the early childhood years for children with disabilities? Public education efforts and targeted campaigns are likely to have only limited impact unless they occur on a massive scale—an unlikely prospect. But inclusive child care may provide the types of frequent and personal experiences so needed to modify long-standing attitudes and beliefs. In fact, child care, by beginning during infancy or the toddler years, has the potential to connect *families*, not only children. A clear challenge for the future, then, is to create a quality system of inclusive child care, one that considers the full spectrum of out-of-home child care placements, and one that creates as early as possible a sense of belonging to the community for all children and families. It is in these inclusive child care settings that community child care and early intervention can come together (Guralnick, in press; O'Brien, 1997). There are few opportunities in contemporary society in which it may be possible to bring about important changes in societal beliefs and attitudes about disabilities. The child care arena presents one such opportunity, one that we must capitalize on with thoughtful and creative support for the systematic development of programs that maximize inclusion.

Specificity

From both programmatic and cost-effectiveness perspectives, one of the most complex problems for the future is to ensure that early interventions are highly individualized and specific to families and children. As discussed earlier in the context of the developmental approach, families exhibit a range of needs due to stressors associated with a child with a disability. Matching services and supports in the context of the early intervention system to address these stressors has been achieved to a sufficient degree to produce the benefits that have been described.

Unfortunately, our knowledge is not yet adequate to individualize to the level needed to maximize our resources and child outcomes. Questions regarding the intensity of services, or the form they should take, or their comprehensiveness remain more dependent on local preferences than empirical findings. Absent as well are well-researched clinical tools that can evaluate the various potential stressors and, perhaps more important, directly assess the three family interaction patterns so closely linked to child outcomes (Figure 3.1). In that both stressors associated with a child's disability and stressors associated with family characteristics prior to the birth of their child (e.g., social supports, financial resources, culturally transmitted child rearing patterns) combine to influence the three patterns of family interaction, resources can be allocated most effectively if reliable and valid clinical instruments are available. Our ability, for example, to identify families where parent-child transaction patterns are not optimal, such as those adopting a performance orientation or an excessively directive style, would allow special programs to be developed and evaluated, and resources to be allocated in a more rational manner. Similarly, our ability to both conceptualize and assess the degree to which parents optimally adjust to their child's characteristics during parent-child transactions (e.g., properly balance directiveness, support, and warmth) is required for the design of highly specific and optimal early intervention programs (Roach, Barratt, Miller, & Leavitt, 1998). Of considerable concern is the unusual vulnerability of children with high-risk family characteristics (e.g., chronic poverty) combined with stressors related to a child's disability. Unfortunately, a substantial proportion of families of children with disabilities face these circumstances (Bowe, 1995). Accordingly, research and program development directed toward this notion of specificity may well constitute the primary challenge for the second generation of research in early intervention, with the potential to yield results that substantially enhance the effectiveness of the early intervention system (Guralnick, 1993, 1997a).

Long-Term Effects

A critical reason for investing extensive resources in early intervention is the expectation that long-term benefits will result. Short-term effects—that is, those occurring shortly after intervention has ended or evident during the first 5 years of life—are well documented, but demonstrating long-term effects for many groups of children with disabilities has been a more difficult task (e.g., Gibson & Harris, 1988). We do know from related research for risk populations where large-scale studies have been carried out that long-term effectiveness can be maximized through interventions that have high levels of comprehensiveness and intensity (Guralnick, 1998). Long-term benefits are particularly more likely to result if early intervention programs continue or even intensify services and supports across transition periods in the child's life (e.g., neonatal intensive care to home; birth-to-3 program to preschool program; preschool to kindergarten).

Consequently, a major task for the future is to gather knowledge regarding the pattern of early intervention program components most likely to yield long-term

benefits. These comparative studies will not be easily accomplished as there are many practical and ethical concerns that must be addressed. As discussed in the previous section, specificity issues must be considered as well. However, by selectively adding program components to existing intervention programs, it should be possible to examine these important issues. In addition, long-term follow-up of children who have systematically received different arrays of intervention components expected to be related to long-term effectiveness must also be analyzed in the context of the post-early intervention environments they experience. This relationship between early intervention and later experiences has simply not received the attention it deserves. Accordingly, although this research agenda may appear to be overly ambitious, it does appear to represent fairly the complexity of the issues facing investigators. However, the knowledge gained is absolutely critical for both the future design of the components of the early intervention system and, of equal importance, for the significant public policy implications relating to the long-term benefits of early intervention.

Implementation

The issues for the future just discussed constitute a search for new knowledge or new program development that will ultimately enhance the early intervention system. But the fact remains that the knowledge, values, and approaches that have evolved in the past 25 years have not been fully incorporated into daily practice in far too many community programs. I discuss possible solutions to this problem shortly, but there does not appear to be any intrinsic difficulty translating research findings or programmatic advances into practice in the field of early intervention. Not only have model programs demonstrated their state-of-the-art capabilities, but many diverse community programs have done so as well. Consequently, other barriers to implementation must be identified.

Lags in implementation exist in many areas. In this section, I discuss concerns related to implementation problems in family-centered programs, inclusion in pre-school programs, and individualizing interventions. After identifying the nature of these implementation problems, I present some possible general solutions.

Family-Centered Programs

One of the major philosophical, conceptual, and practical advances in the field of intervention has been to place families at the center of the early intervention system (Guralnick, 1989). In essence, programs must be carefully designed to meet the overall needs of families and integrate intervention activities into the natural flow of family life as a means of maximizing child development (Bernheimer & Keogh, 1995; Galimore, Weisner, Bernheimer, Guthrie, & Nihira, 1993). It has been in this context that the terms parent-professional partnerships and empowerment have been realized. Yet, despite considerable progress, continuing discrepancies remain between parental

needs and the services and supports provided by the early intervention system, especially in relation to the formal intervention components (e.g., Filer & Mahoney, 1996; McBride & Peterson, 1997).

It is understandably a difficult transition for service providers to shift to a family-centered approach from a more child-oriented model. For experienced professionals, it may demand an entirely new way of thinking that often conflicts with long-established behavioral patterns. Professionals may not be comfortable with this new role, wondering whether they have the skills as they enter new domains related to family functioning. Moreover, the emphasis on family centeredness is often diluted when shifting from infant-toddler programs to preschool programs. Parents, too, must make adjustments and may need to be encouraged to adopt a more dominant, decision-making role and to recognize that child development unfolds and is maintained best when the total family and community ecology is considered.

In addition, successful family centeredness requires collaborating with other agencies to create an integrated system of resources and social supports. Yet this is particularly difficult, as this approach requires many service providers to thoroughly reconceptualize their own early intervention models. Clearly, despite the fact that the concept of family-centered services and supports is still evolving, the knowledge and tools are available to produce more widespread implementation than currently exists.

Inclusion in Preschool Programs

In a similar way, the availability of inclusive programs for children with a range of developmental delays is far from adequate. This observation is perhaps of most concern for preschool-age children as they participate in programs organized by the public education system. Despite repeated demonstrations in community programs that inclusive practices are both feasible and effective for preschool-age children, an unusually large number of communities have been unable, uninterested, or even resistant to adopting inclusive programs for young children. In part, this may be a result of "systems" resistance, as inclusive programs require new forms of administrative activities and thinking. However, the desire of parents of children with disabilities to press for inclusion is also tempered by persistent concerns about the need for well-trained personnel and the availability of specialized services (Guralnick, 1994). Consequently, some mechanisms must be found to address these systems-level and parental concerns in order to promote the implementation of inclusive early childhood programs.

Individualizing Interventions

There are few goals more important than individualizing interventions to accommodate to unique child needs and family characteristics. The fact is that successful individualizing implies an awareness of all the complex factors influencing child and family life and then selecting the most current intervention strategies in order to create a

state-of-the-art program of services and supports. The goal of individualization for far too many children and families remains just that, however—a goal (e.g., Goodman, 1993).

One reason is that the demands on the early intervention system to individualize within a family-centered framework are increasing dramatically due to the large number of families with multiple risks (Hanson & Carta, 1995). These risk factors or nonoptimal family characteristics include poverty, mental health problems, limited intellectual abilities of parents, substance abuse, the absence of a support system, and intergenerationally transmitted inappropriate models of child development. Of note, fully one third of families of children with disabilities live at or below the poverty level (Bowe, 1995). As suggested earlier, these adverse family characteristics can also directly influence the three family interaction patterns governing child developmental outcomes. When life stressors due to family characteristics combine with the stressors associated with a child with a disability, the prospects for optimal family interaction patterns are dismally low (e.g., Bradley et al., 1994). Unfortunately, a strong association between stressors and the services and supports provided by the early intervention system has not been found (Gavidia-Payne & Stoneman, 1997).

Clearly, even if the rate of growth of multiple-risk families moderates, the challenge for individualization remains. At minimum, it will require the early intervention system to coordinate with an even larger array of agencies than currently exists in order to optimize services and supports. It may also force a consideration of new models of service, such as intensive intervention-oriented day care for children from multiple-risk families in a manner similar to that recommended for children without disabilities but with high family risks (Guralnick, *in press*).

Similarly, as our population becomes more diverse, knowledge about the unique beliefs, attitudes, child rearing practices, and expectations of culturally diverse families must be incorporated into each individualized plan in order to have any chance for a successful outcome. Evidence available from relationships between teachers and parents in ethnoculturally diverse early childhood settings suggests that much work needs to be done (Bernhard, Lefebvre, Kilbride, Chud, & Lange, 1998).

Admittedly, individualization is a seemingly never-ending process as more information becomes available through second-generation research on specificity issues. Yet, our inability to incorporate what we know (from both research and practice perspectives) into day-to-day curricula and interventions with children and families to permit high levels of individualization constitutes a severe challenge to meaningful implementation of quality programs. In the next section, I discuss some possible ways to address this particular problem, as well as those related to implementation in general.

Promoting Implementation in the Future

These and related implementation problems (e.g., transitions between birth-to-3 and preschool programs) are perhaps even more challenging to the field of early interven-

tion than knowledge and program development issues. Unless new implementation approaches or models are found in the framework of the early intervention system, implementation will fall further and further behind as new information is made available through second-generation research. Suggestions are presented below with regard to a new approach to personnel preparation and strategies to enhance parent advocacy. Business as usual is not an acceptable alternative.

Consultant Specialists

One possibility for change is to reevaluate the training and skills required by certain key personnel. Consider the training of the early childhood educator, often the central person in program implementation. The training must, of course, include information and skills related to children's special needs and ways to conceptualize, organize, and develop family-centered relationships. However, to be compatible with the developmental framework, this specialized training must occur within a generalist tradition. Various blends of early childhood and disability-specific training have, of course, been created, and this process should be accelerated. Often this requires administrative restructuring of categorically organized training within university-based personnel preparation systems. In addition, similar (although certainly less extensive in many instances) training should be required for child development specialists or others who may be responsible for center-based day care. Whether these educators are the early interventionists of the birth-to-3 program, the early childhood (special) educators in the child's preschool program, or the child care specialists in the day care program, these individuals clearly play a pivotal role in the formal intervention program. As individuals with specialized knowledge of disability issues combined with generalist training, they often function as the child's service coordinator.

Through the increasing availability of generalist educators with specialized training, and by ensuring that the training occurs at the preservice level, it is likely that the comfort level of parents of children with disabilities will correspondingly increase. Parents should certainly be able to form partnerships with these generalists to implement family-centered programs, to contribute to the design of a state-of-the-art array of support and services, and to have increasing confidence that these programs can be effectively provided in an inclusive setting.

Yet, even through an active continuing education program, it is not reasonable to expect these generalists to have the sophisticated expertise needed to address the highly individualized needs of children with disabilities and their families. Consequently, it is imperative to ensure the availability of a well-trained (master's level at minimum) group of *consultant specialists*. These specialists (most already have or will obtain credentials for a generalist background) would be trained within a highly interdisciplinary framework and would be assigned to some organizational entity within the birth-to-3 system for infants and toddlers or the local education agency for preschool-age children. Their main responsibility would be to advise and consult with the generalist educational staff, helping to ensure implementation of state-of-the-art practices, with particular reference to the

children with disabilities in the program. They would bring new information as it emerges to the attention of the generalist educator and work closely with other specialists to maximize the integrated and coordinated nature of the services and supports for individual children. Both technical assistance and advocacy roles can be envisioned. Through this process of ongoing professional exchange, knowledge would be enhanced for both the generalist and the consultant specialist. Despite the high level of expertise of these specialists with respect to disability issues, the parents' main contacts would remain with the generalist or service coordinator who essentially has primary responsibility for all children in the (hopefully inclusive) setting and would continue to work together with and to support and strengthen the family.

To ensure that the consultant specialist's knowledge continues to be current, links with local universities, required participation in continuing education programs, an awareness and examination of model programs that may develop addressing both knowledge and implementation issues, and perhaps involvement in a regional or national network that could be established devoted to ensuring that current knowledge and techniques are available to these specialists should all occur. Although the generalist will certainly participate in numerous continuing education activities, only a small proportion will likely involve disability issues. Accordingly, through advice, demonstration, and consultation, the consultant specialist will in essence be the conduit for expanding the knowledge and clinical skills related to children with disabilities for the generalist. It is this same consultant specialist who would play a similar role for designated staff in children's day care settings.

The benefits of such an approach would be to maximize the quality of inclusive practices both as part of the formal early intervention program and in the larger community system, help individualize intervention activities using the most current strategies and techniques, and continue to emphasize and reinforce the family's central role in this process. This approach also addresses concerns of both teachers and parents related to the availability of trained specialist personnel, particularly in inclusive settings. Of course, adequate resources must be available to assure that other well-trained specialists (e.g., physical therapists) are available to provide specialized therapeutic services. For the most part, this is an issue that requires advocacy backed by effectiveness data. Perhaps the involvement of a consultant specialist can help ensure cost-effective use of these specialists by integrating their therapeutic activities in the natural flow of the child's activities and thereby maximize their impact. A consultant model carried out in a larger and naturalistic context, rather than a specialist model involving a one-on-one didactic-like approach, makes considerable sense from an educational and developmental perspective in most instances and will likely be the model for the future (see Bailey, 1996).

Parent Advocacy

Finally, efforts to provide families with the motivation and techniques to be active advocates for their children should be expanded to address the implementation prob-

lem. One mechanism is for parent-to-parent groups, through their mentoring activities, to expand their formal ties to the early intervention system. As noted earlier, the difficulties in implementing family-centered programs, values, and principles can in part be traced to lack of a full appreciation of the implications of family centeredness by the families themselves. As such, expectations are either low or focus primarily or even exclusively on child-directed, often instructional activities. In other instances, professionals either do not understand or have difficulty altering their existing approaches to families. Not only would the implementation of a family-centered agenda be strengthened through family advocacy efforts, but parents would also ensure that the early intervention system would continue to be responsive to stressors across the entire early childhood period. As discussed earlier, long-term benefits of early intervention can be expected only if this type of continuity in the early intervention system is maintained over time, particularly across transition periods. Hopefully, expanded advocacy activities will extend beyond early childhood, encouraging a more family-centered agenda in general.

SUMMARY AND CONCLUSIONS

Over the course of the past 25 years, a comprehensive and well-organized early intervention system of services and supports has emerged. The system that has evolved can be well understood within a developmental framework as a thoughtful response to stressors facing families of young children with disabilities. When these systems components are available to families, evidence clearly indicates that important short-term benefits occur. Related evidence indicates the types of programs needed to achieve long-term impact.

Two major themes were identified that can serve as a guide for the future development of the early intervention system. First, areas requiring new knowledge or program development were discussed. Special emphasis was given to social development, inclusion in community life, specificity, and long-term effectiveness. In essence, these topics constitute the basis for an important agenda for second-generation research and program development in the next millennium. Second, problems in implementing existing knowledge and established practices were discussed focusing on the areas of family centeredness, inclusion of preschool-age children, and individualizing interventions for children and families. Although there are many ways to address implementation concerns, suggestions were made with respect to a model of personnel preparation emphasizing the role of a consultant specialist and the importance of expanding parent advocacy.

Taken together, the new millennium brings with it extraordinary opportunities to build upon the existing early intervention system. The complex issues to be faced can be matched only by the rapid advances in knowledge and program development likely to occur in the years ahead. How we conceptualize and manage this entire process will do much to determine the ultimate benefits obtained by children and families from participating in the early intervention system.

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