

2 Early intervention for young children with developmental delays

Contributions of the developmental systems approach

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Those engaged in the field of early intervention today are involved in perhaps its most vibrant historical period. Progress reports summarising innovative projects, journal articles describing new advances, and conference papers alerting us to possible future directions all bring to our attention the extraordinary amount of knowledge being generated with respect to strategies and approaches designed to enhance the development of vulnerable young children. Moreover, dramatic increases are occurring with respect to our understanding as to how development unfolds for vulnerable children and the specific developmental mechanisms, pathways, and influences involved. These advances suggest that a more complete integration of the fields of early child development and early intervention is rapidly approaching. Perhaps most impressive is the diversity of intervention approaches taken to enhance the development of vulnerable children; some addressing a relatively narrow aspect of development, whereas others design and implement more complex and comprehensive sets of intervention strategies. Nevertheless, the vast array of models and intervention strategies that are continually emerging are signs not only of the complexity of the issues that the early intervention field confronts, but also indicate the vigour, commitment, and energy of those seeking to find the most effective means of supporting children's development.

To be effectively applied in early intervention programs, however, this new knowledge must be organised and interpreted in a meaningful context, placing it in a programmatic and developmental framework. Unless this occurs, new knowledge will take the forms of isolated bits of information, creating uncertainty as to how and whether it can be usefully and effectively incorporated into a more comprehensive early intervention program. Accordingly, a systematic approach to early intervention is needed that can provide a framework for incorporating this knowledge and ultimately translating it into a coherent and comprehensive early intervention program at the individual child and family level.

The purpose of this chapter is to outline the elements and assumptions of the developmental systems approach (DSA) to address this issue focusing on young children with developmental delays (Guralnick, 2005a, 2005b). As will be seen, the DSA centres on families as they seek to provide as optimal a developmental

environment for their child as possible. At the same time, the DSA recognises the importance of incorporating knowledge from developmental systems as applied to all children. To do so, it is important to consider complex interactions occurring among and within the levels of the child, family patterns of interaction that directly influence the child, and a family's resources. Accordingly, the DSA attempts to integrate the knowledge of the developmental science of normative child development and the knowledge that has been derived from studies of developmental science that focus on circumstances related to risk and disability. Central as well to the DSA is its emphasis on relationships. Through the formation of high-quality relationships with parents, extended family, and others significant in the life of the child, mechanisms of influence are established capable of providing sustained support for the development of young children's social and cognitive competence.

The DSA has been influenced by many existing systems models (e.g., Bronfenbrenner, 2001; Sameroff, 2009) as well as the developmental psychopathology approach designed to apply general developmental systems principles and findings to atypical populations (Cicchetti & Cohen, 2006; Lewis, 2000). A distinguishing feature of the DSA is its application specifically to issues in the early intervention field and its ability to establish a direct connection between developmental science and intervention science. With respect to intervention science and its association with practice, the principles described in Dunst's approach to support family systems in the context of early intervention have been most influential (see Dunst & Trivette, 2009).

The developmental systems approach

Figure 2.1 illustrates the three levels of the DSA and identifies some of the key interrelationships that must be considered within this systems framework. The DSA assumes that the overarching goal of early intervention is to maximise children's social and cognitive competence. It further recognises that in so doing, children will have more adequate internal resources at their disposal to achieve their interpersonal goals as they move through different developmental periods and eventually reach adulthood. Goals therefore range widely over time, such as reducing discomfort to achieving material ends to establishing social connections. The early years provide unique opportunities to establish a positive developmental trajectory in this regard for all children (Shonkoff & Phillips, 2000).

Three interrelated levels of the DSA are identified in Figure 2.1 and are expanded upon in this chapter. The level of child development (first level: social and cognitive competence) identifies components that constitute children's developmental resources and organisational processes which, taken together, are engaged in a systematic and coherent manner when children attempt to achieve their interpersonal goals. To be sure, genetic and epigenetic processes as well as other biological mechanisms have a substantial effect at this level, but all interact over time with experiential factors that are the direct influence of what the DSA refers to as family patterns of interaction (second level). The three major domains

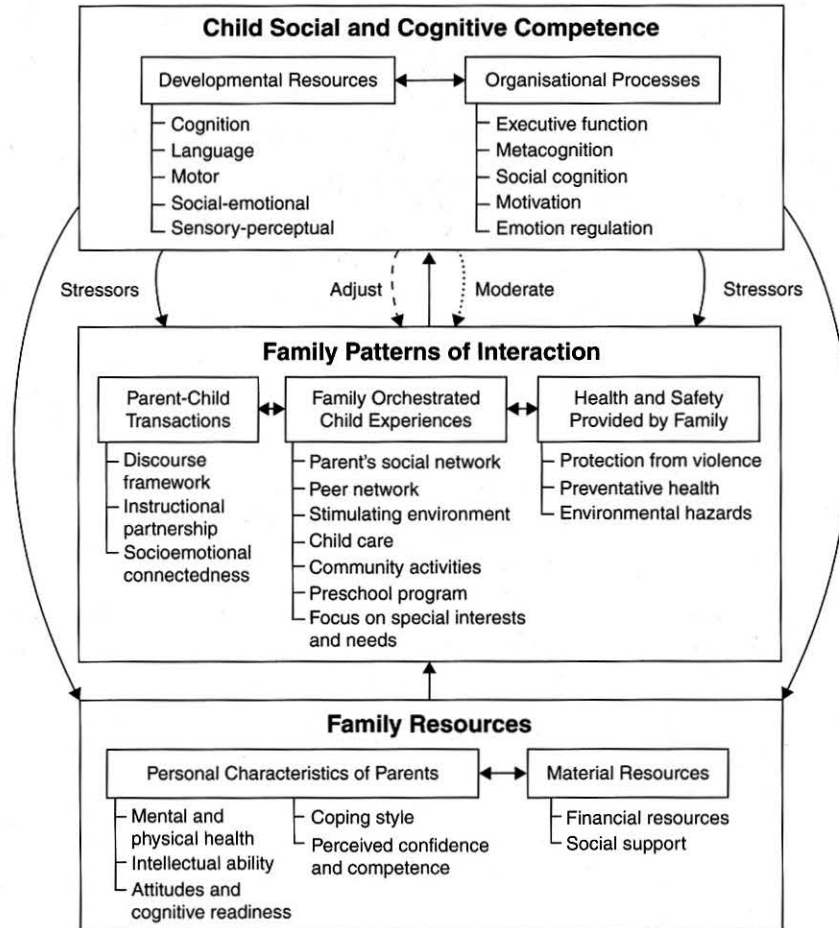


Figure 2.1 The developmental systems approach illustrating the levels, components, and interrelationships of the approach

Source: Adapted from “Why Early Intervention Works: A Systems Perspective,” by M. J. Guralnick, 2011, *Infants & Young Children*, 24, pp. 6–28. Copyright 2011 Lippincott Williams & Wilkins.

of family patterns of interaction that influence the level of the child (and therefore children’s competencies) are parent-child transactions, family-orchestrated child experiences, and the child’s health and safety as provided by the family. Of note, transactions refer to those instances in which true relationships between individuals have been established. Along with their identified components, these three domains constitute the proximal influences on children’s developmental resources and organisational processes, and each component within these three domains can serve as a risk or protective factor. Indeed, these proximal influences are the major focus of early intervention.

The third level, family resources, represents more distal influences on child development. Family resource components noted in Figure 2.1 relate to the personal characteristics of parents and the material resources provided by families. They also constitute a set of risk and protective factors that operate primarily through their effects on family patterns of interaction. Interactions among components within a level and interrelationships between levels are becoming increasingly well understood for both typically developing children and for children at risk for, or with, established developmental delays. Indeed, these interactions and interrelationships can generate cumulative effects that result from either risk factors or factors that can protect or promote development. Moreover, as will be seen, this conceptual system can serve as a framework for the design, implementation, and evaluation of early intervention systems (Guralnick, 2005c).

Level of child development

Children's interpersonal goals change dramatically over time as skills develop and interests take different forms. Indeed, the early childhood period is characterised by remarkable growth in children's competencies. Early goals range from more reactive efforts such as regulating one's emotions in the face of uncertain or uncomfortable situations to extraordinary proactive efforts to engage in or gain an understanding of their social and physical world (Chouinard, 2007; Feldman & Masalha, 2010; Woodward, 2009). As conceptualised within the DSA, carrying out these interpersonal goals is realised by utilising an array of social and cognitive competencies that, in turn, are dependent on developmental resources and organisational processes (see Figure 2.1). Developmental resources are similar to the conventional organisation of developmental domains in terms of cognition, language, motor, socio-emotional, and sensory-perceptual abilities.

Although unquestionably interrelated, each domain has a set of well-defined features and developmental course (e.g., phonology, vocabulary, morphosyntax, and pragmatics for language). Moreover, as children seek to accomplish their goals (i.e., solve problems about the physical and social world), they enlist organisational processes as well. These complex and interrelated processes consist of well-conceptualised constructs of executive function, metacognition, social cognition, motivation, and emotion regulation. Although not as easily measured as developmental resources, each nevertheless has a strong empirical basis (Beauchamp & Anderson, 2010; Best & Miller, 2010; Cole, Martin, & Dennis, 2004; Pintrich, 2000). To be sure, unevenness in the relative strength, quality, specific features, and rates of development for both developmental resources and organisational processes are common, yet a coherent pattern of development can be identified that together characterises and constitutes a unique individual as a fully recognisable "self" during the early childhood years.

Developmental constraints for children with delays

There are always variations and perturbations as development unfolds as a consequence of interactions among biological, environmental, and cultural influences.

Despite each child's unique behavioural and developmental pattern, parents and others in the child's sphere of influence are usually able to make adjustments to these characteristics to provide an optimal or near-optimal environment supporting a child's development. Indeed, even in non-optimal environments, most children engage in activities that enable them to extract sufficient information about the physical and social world to support their developing competencies and to carry out their interpersonal goals (Gopnik & Wellman, 2012; Xu & Kushnir, 2013). Resilience is a common characteristic of development.

But the situation changes dramatically when children's development is affected by biological factors that have a substantial adverse effect. Disruption to development of sufficient severity creates constraints on a child's development, potentially producing delays or differences in many areas, including components of both developmental resources and organisational processes. The focus of this chapter is on children where delays are evident during the early childhood period and, at minimum, affect overall aspects of their cognitive development in a significant manner. Formal diagnostic/classification processes, including appropriate assessments of adaptive behaviour, may or may not reveal an aetiology for these delays but the likelihood is that the vast majority of young children identified during this period will experience life-long challenges related to intellectual disability (e.g., Keogh, Bernheimer, & Guthrie, 1997). Although an understanding of what constitutes cognitive development is still evolving, the recent cognitive test battery included as part of the National Institutes of Health Toolbox (Zelazo & Bauer, 2013) identifies the following five areas as critical: (1) executive function and attention; (2) episodic memory (primarily the storage of events, place in time, and their sequence); (3) language (focusing on vocabulary); (4) working memory; and (5) processing speed. These domains are representative of what is referred to as fluid intelligence (related to problem-solving skills and adjustments to the immediate situation and novel events) and to crystallised intelligence (dependent more on experience, such as exposure to new vocabulary words).

Among the many causes of these delays are in-utero exposures to alcohol, drugs, or environmental chemicals, fetal and post-natal infections, exposure to toxins during peri- and post-natal periods, and preterm birth (Diav-Citrin, 2011; Ergaz & Ornoy, 2011; McDermott, Durkin, Schupf, & Stein, 2007; Sansavini, Guarini, & Caselli, 2011). Genetic factors play a major role as well in the form of chromosomal disorders, deletion syndromes, or single-gene disorders (Chelly, Khelfaoui, Francis, Chérif, & Bienvenu, 2006; Mefford, Batshaw, & Hoffman, 2012), or as part of a pattern of polygenic inheritance, usually in combination with significant environmental risks such as chronic poverty (Iarocci & Petrill, 2012). These biological constraints set into motion a developmental pattern that alters specific developmental resources and organisational processes and often requires children to solve their interpersonal goals in different ways using the developmental tools available to them.

For children with genetic disorders in particular, etiologic-specific developmental patterns have been identified that may prompt more innovative intervention approaches, enabling parents to adjust more effectively to their children's developmental and behavioural abilities (Hodapp, Desjardins, & Ricci, 2003).

For example, much is known about the special eye-movement planning problems of children with Williams syndrome, which affects exploration of the visual world, generates general spatial cognitive difficulties, and ultimately adversely influences joint attention episodes so critical for promoting language and other aspects of development (see Brown et al., 2003).

Accordingly, constraints in early aspects of development create a cascade of events that influence developmental patterns over time (Karmiloff-Smith, 2009). As other examples, well-established problems related to emotion regulation, working memory, and social anxiety, among other areas, for children with Fragile X syndrome (Abbeduto, Brady, & Kover, 2007; Cornish, Turk, & Hagerman, 2008; Hagerman, 2011), as well as the executive function, cognitive instabilities, task persistence, and expressive language concerns of children with Down syndrome (Gilmore, Cuskelly, Jobling, & Hayes, 2009; Glenn, Dayus, Cunningham, & Horgan, 2001; Lee et al., 2011; Roberts, Price, & Malkin, 2007; Wishart, 1996) identify issues to be aware of that occur with a higher likelihood for children with these syndromes that affect developmental patterns as they emerge across the early childhood period. At the same time, etiologic-specific information has revealed relative strengths exhibited by children that could be capitalised upon when designing early intervention programs. The relative strength in the use of gestures by children with Down syndrome provides just one example (Lee et al., 2011).

A cornerstone of early intervention has always been its emphasis on individualising supportive approaches. The fact is that despite the usefulness of etiologic-specific information, considerable within-syndrome variability exists. Moreover, etiologic information of developmental value is not available for most children with delays receiving early intervention services. Nevertheless, whenever developmental patterns emerge as a consequence of biological constraints, they increase the likelihood that parents and others playing significant roles in the child's life will have difficulty adjusting to their child's characteristics to establish an optimally supportive developmental environment. It is precisely when these adjustments are not adequate or when it is anticipated that adjustments may not be considered by families that early intervention can have a major influence. More specifically, child-specific characteristics may affect a family's pattern of interactions with their child to the extent that a non-optimal developmental environment is created. These child-specific influences are referred to as stressors within the framework of the DSA (see Figure 2.1) and are discussed shortly.

Family patterns of interaction

Especially for young children, the DSA proposes that, from an experiential perspective, the three types of family patterns of interaction noted above are critical to a child's development. This is the case irrespective of any biological constraints. Without question, biological constraints as reflected in the various developmental resources and organisational processes that underlie children's social

and cognitive competence can influence the specific effects a particular level of quality of family patterns of interaction can have on a child's development (see dotted line indicating the moderating effects at the level of child development in Figure 2.1). For example, even linguistic input provided with modest quality by parents is sufficient for children developing typically to extract essential information and develop appropriate language skills. However, children for whom biological constraints exist may well need high-quality linguistic input to achieve the same results (Rowe, Levine, Fisher, & Goldin-Meadow, 2009). Moreover, recent research on genetic factors has revealed how variation in overall sensitivity to environmental inputs also serves as an important moderator of effects (Belsky & Pluess, 2013). Consequently, the message for early intervention is that strategies must be developed to enable parents and others engaging in interactions with the child to adjust to their child's characteristics such that high-quality family patterns of interaction are the result.

Particularly during the first years of a child's life, the quality of relationships in the form of parent-child transactions that are established is the central mechanism that promotes children's social and cognitive competence (see Guralnick, 2011). Emphasis is placed on emerging relationships; constructs characterised by cooperation, synchrony, and positive ambiance (Aksan, Kochanska, & Ortmann, 2006; Feldman, 2007), as well as a shared set of expectations that parents and children are engaged in a collaborative enterprise (Tomasello & Carpenter, 2007). This collaborative enterprise is realised through three interrelated *relationship processes* so that parents (and others) can establish: (1) a discourse framework; (2) an instructional partnership; and (3) socioemotional connectedness. These relationships emerge over time as interactions occur in various contexts and are generated as a result of parents' ability to maintain contingent and predictable patterns of interaction which not only focus on the child in general but also consider the child's specific developmental capabilities, interests, motivational style, and related characteristics. Taken together, this pattern is referred to as "sensitive-responsiveness" (see Ainsworth, Blehar, Waters, & Wall, 1978) and, along with a sufficient level of engagement with the child accompanied by affectively warm interactions, the foundation for building the three relationship processes of parent-child transactions are in place.

The second major feature of family patterns of interaction consists of those experiences orchestrated by families that have the ability to enhance a child's competencies. The components of family-orchestrated child experiences are listed in Figure 2.1. As is the case for parent-child transactions, extensive evidence is available indicating that the quality of each of these experiences contributes to a child's development. Dunst and colleagues in particular (see Dunst, Hamby, Trivette, Raab, & Bruder, 2000) have demonstrated the critical nature of these experiences and the cumulative benefits that result. Moreover, although often constrained by forces well beyond the control of families, it is nevertheless the case that children's health and safety as provided by the family also contribute to children's overall wellbeing and development (e.g., Cole & Winsler, 2010; Strickland et al., 2004).

Accordingly, each of the components of the three family patterns of interaction listed in Figure 2.1 can be said to constitute risk or protective factors. Sufficient evidence is available to suggest that family patterns of interaction influence children's social and cognitive competence through their effects on children's developmental resources and organisational processes. Information with respect to these patterns of influence is available for typically developing children (Guralnick, 2011), for children with established disabilities (Guralnick, 2005a, 2005c, 2016), for children at biological risk due to preterm birth (Guralnick, 2012), and for children at risk due to environmental factors (Guralnick, 2013).

Stressors to family patterns of interaction

The complex child-specific patterns commonly evident for children with developmental delays have the potential to reduce the quality of all of these components of family patterns of interaction, especially those associated with parent-child transactions. Parents can become more directive or even intrusive especially when their child is more passive. They may also find it difficult to engage in joint attention episodes, provide a less enriched linguistic environment for their child, or fail to tailor language exchanges appropriately due to difficulties in reading their child's cues or understanding fully the unevenness of children's developmental resources (e.g., Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001; Murphy & Abbeduto, 2005; Spiker, Boyce, & Boyce, 2002). Family-orchestrated child experiences can also be affected, such as difficulties parents experience in helping to establish and support their child's relationships with peers (Guralnick, 2010).

It is critical to emphasise that despite these challenges, many if not most parents of young children with delays are highly effective, making necessary adjustments to their child's characteristics. That is, they are able to prevent stressors from developing. As one example, forming an instructional partnership with children with delays is often difficult to accomplish, but many parents can indeed make the required adjustments in the level of scaffolding needed to support structured play (Guralnick, Hammond, Neville, & Connor, 2008). Many other examples of highly appropriate and effective parental adjustments to children with delays exist (Bernheimer & Weisner, 2007; Venuti, De Falco, Esposito, & Bornstein, 2009). Consequently, careful assessments of each of the components of family patterns of interaction must be an essential feature of early intervention programs, with substantial intervention activities involving those families who both experience stressors and recognise the value of enhancing all components of family patterns of interaction.

Family resources

Child-specific factors cannot only create stressors at the level of family patterns of interaction, but can also do so with respect to the various components at the level of a family's resources (see Figure 2.1). Components of family resources most vulnerable to stressors are parents' mental health, especially in the context

of child behaviour problems, lack of social support, and parents' perceived concerns with respect to their confidence and competence in carrying out the parenting role (Crnic, Pedersen Y Arbona, Baker, & Blacher, 2009; Eisenhower, Baker, & Blacher, 2005; Glidden, 2012). Within the DSA framework and as illustrated in Figure 2.1, family resources directly influence family patterns of interaction. Consequently, stressors to family resources can exacerbate any effects of stressors at the level of family patterns of interaction. Moreover, especially given the association between poverty and the likelihood of having a child with a developmental delay in a family (Emerson & Hatton, 2009), risk factors at the level of family resources are often higher at the outset, even before child-specific stressors add additional risks. A consequence of these interrelated patterns can be a major disruption in the quality of numerous components of a family's pattern of interactions.

Adjustments

It is important to emphasise that most families of children with delays will not require a highly intensive and comprehensive level of early intervention supports and services in order to establish as optimal a developmental environment as possible for their child. Indeed, most families are quite capable of making needed adjustments, often relying on a positive coping style, adequate financial resources, or a supportive social network. Family adaptation, especially over time, is common as appropriate and effective adjustments with respect to specific forms and quality of family patterns of interaction are achieved. There exist, however, subgroups of families who will likely experience difficulties making these adjustments thereby experiencing stressors affecting the level of family patterns of interaction as well as from stressors or pre-existing risk factors at the level of family resources. Together, these challenges cumulate and can create perturbations throughout the entire system. From the child's perspective, this ultimately results in a circumstance in which non-optimal quality of family patterns of interaction are provided. It is through early intervention programs centring on families that these stressors can be addressed, capitalising on protective factors evident in the family structure.

Organisational features of the DSA

One important feature of the DSA is its ability to provide an organisational structure for the many complex components and processes associated with an early intervention program. It also has the potential for organising new knowledge generated by the field, as noted in the introductory section of this chapter. Most evident is that early intervention programs should be designed specifically to enhance the quality of family patterns of interaction. The components selected for inclusion in the DSA at that level are those that have clear and direct relevance to enhancing a child's development. The ultimate success of any early intervention program is its ability to expand a family's capacity to support children's social and cognitive development.

This general approach is outlined in Figure 2.2. With respect to assessment at each level of the DSA, in practice, before a formal early intervention program is designed and implemented, information about a child’s overall developmental status is typically available, usually with respect to their developmental resources. Similarly, basic demographic information about the family is usually available, providing some sense for the level of risk and protective factors at the level of family resources. Indeed, larger numbers of paediatricians are gathering information about a family’s psychosocial risks through surveillance and use of screening tools that can be utilised by an early intervention team (Garg & Dworkin, 2011).

The key to assessment within the DSA, however, is a careful evaluation of all of the components at the level of family patterns of interaction. This approach then provides an unambiguous structure for gathering critical information about the quality of each component. For example, for parent-child transactions, screening tools related to sensitive-responsiveness, affective warmth, and engagement are available (e.g., Bradley, 2012; Landry, Smith, & Swank, 2006; Tamis-Lemonda, Uzgiris, & Bornstein, 2002). Concerns emerging from the screening process would then lead to a more in-depth assessment of the quality of relationships, focusing on one or more of these three aspects of parent-child transactions. Although relevant instruments capable of capturing the essential features of relationships at various developmental periods consistent with the DSA are now being developed (Aksan et al., 2006), much more needs to be accomplished. As information on these and other forms of assessment relevant to the DSA become available, they can be incorporated into the process. Other, minimally intrusive processes involving parental interviews, questionnaires, or gathering information from service personnel can generate a realistic portrait of the child’s experiences

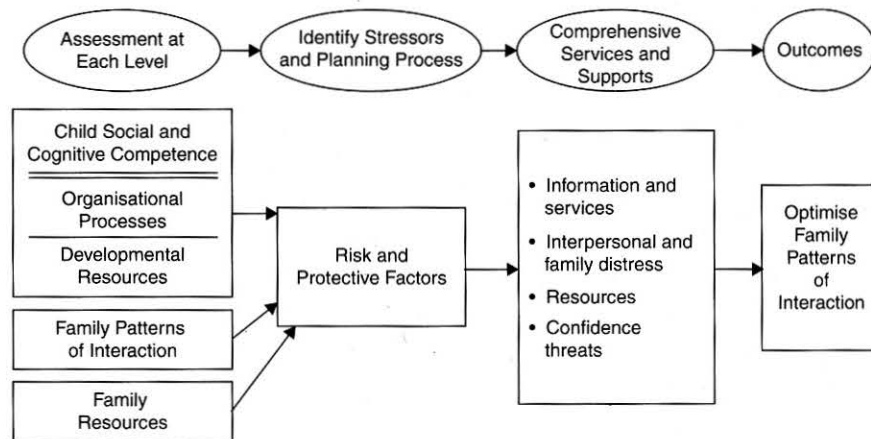


Figure 2.2 Sequence of activities associated with the developmental systems approach designed to optimise family patterns of interaction

Source: Created by the author

as provided by the family, particularly involvement in community activities. Collaborations with health and social service professionals can provide additional information with respect to the child's health and safety provided by the family.

Assessments at each of the three levels of the DSA create the basis for a planning process, organised around the risk and protective factors that are identified. A comprehensive plan of services and supports is then designed, guided by the profile established within the framework of the components at the level of family patterns of interaction and family resources. At the same time, issues identified at the level of child development are considered. At the family resource level, what follows will typically include an array of information and services, including community resources to help address any interpersonal or family concerns, as well as addressing any threats to a parent's confidence in carrying out the parenting role. Once again, as noted in Figure 2.2, the central goal is to optimise family patterns of interaction, and structuring assessments in the form of a partnership with parents helps to organise and make sense of the often unusual complexities associated with supporting children with developmental delays. Working with families to increase their awareness of the power of relationships and identifying the three types of relationship processes can generate a framework for both understanding developmental mechanisms and guiding parent actions. It also provides a common language and a shared set of goals between the parent and the early intervention team.

It is beyond the scope of this chapter to provide details about the intervention options associated with each component of family patterns of interaction or ways to enhance a family's resources, but numerous relevant curricula, strategies, and resources are available. A number of curricula and strategies consistent with the DSA have been summarised (see Spiker, Hebbeler, & Mallik, 2005). Many learning opportunities that are available as part of community activities as articulated by Dunst and colleagues (Dunst et al., 2000), and approaches to enhancing social supports (Dunst, Trivette, & Jodry, 1997) are also well established. Moreover, the DSA can serve as a useful guide to organise new findings relevant to intervention in the field, ones that are sufficiently evidence-based. These strategies can then be considered as possible intervention options for specific components of family patterns of interaction or family resources. As a consequence, existing and new intervention approaches are considered in a context; one that supports an integrated and conceptually coherent approach to supporting and strengthening families.

Problem-solving process

As valuable as an organisational structure may be for any early intervention system, the fact remains that early intervention is a clinical enterprise relying on the ability of all involved to engage in a problem-solving process. Difficulties enhancing the quality of the components of a family's pattern of interaction are inevitable, often arising as children enter different developmental periods. This problem-solving process may require obtaining much more in-depth information

at the level of child development, especially with respect to organisational processes. As a consequence, special adaptations addressing emotion regulation or task motivation may be needed when difficulties emerge forming, for example, a high-quality instructional partnership. Similarly, further probing of the components of family resources, both the personal characteristics of parents and material resources, may reveal influences at that level that must be urgently addressed or suggest the need for alternative forms of intervention. Family resource issues are sensitive matters, as family systems constitute a complex network of relationships, beliefs, and attitudes. Early intervention activities at this level must be carried out with extreme care, with the recognition that some of the components cannot be easily addressed or will require a long-term investment before an impact is realised. Political, social, and community resource constraints must be recognised but not accepted. Creative problem-solving that yields even small gains can have long-term benefits. Early intervention is an ongoing process, the dynamic nature of which continually requires adjustments from all involved.

As Dunst and Trivette (2009) appropriately point out, to be successful, such a process must consider the needs and aspirations of families, their style of relating, and the supports and resources they have available on a regular basis. Recognition of these factors facilitates both the assessment and intervention phases of early intervention as well as the modifications required over time as a result of informal and formal evaluations. Clearly, the success of this process depends importantly on the relationship between early interventionists and family members. Dunst and Trivette's (2009) twelve principles of effective help-giving provide essential guidelines.

Systems integration and principles

Figure 2.3 provides a flowchart that translates the DSA into a process that can be implemented as part of a system of early intervention practices in community settings (Guralnick, 2001). The sequence of activities ranging from screening through transition planning is designed to integrate the multi-level developmental constructs of the DSA described in this chapter. In addition to these structural features and its developmental orientation, any early intervention system must also be guided by a set of principles and values (Guralnick, 2008). The help-giving principles noted above constitute one key example. Moreover, emphasis in the DSA on relationships within the principle of utilising a developmental framework extends beyond the formation of high-quality parent-child transactions to include relationships between early intervention professionals and families, as well as relationships between children and other adults, especially child care professionals and preschool teachers. Each relationship has somewhat different qualities, but yet is essential for the system to operate effectively in order to support a child's development. Other principles and values include ensuring that integration and coordination among all the elements of the system are maximised, that every effort will be made to include the child in natural settings and, that despite commonalities expected among etiologic subgroups or families with

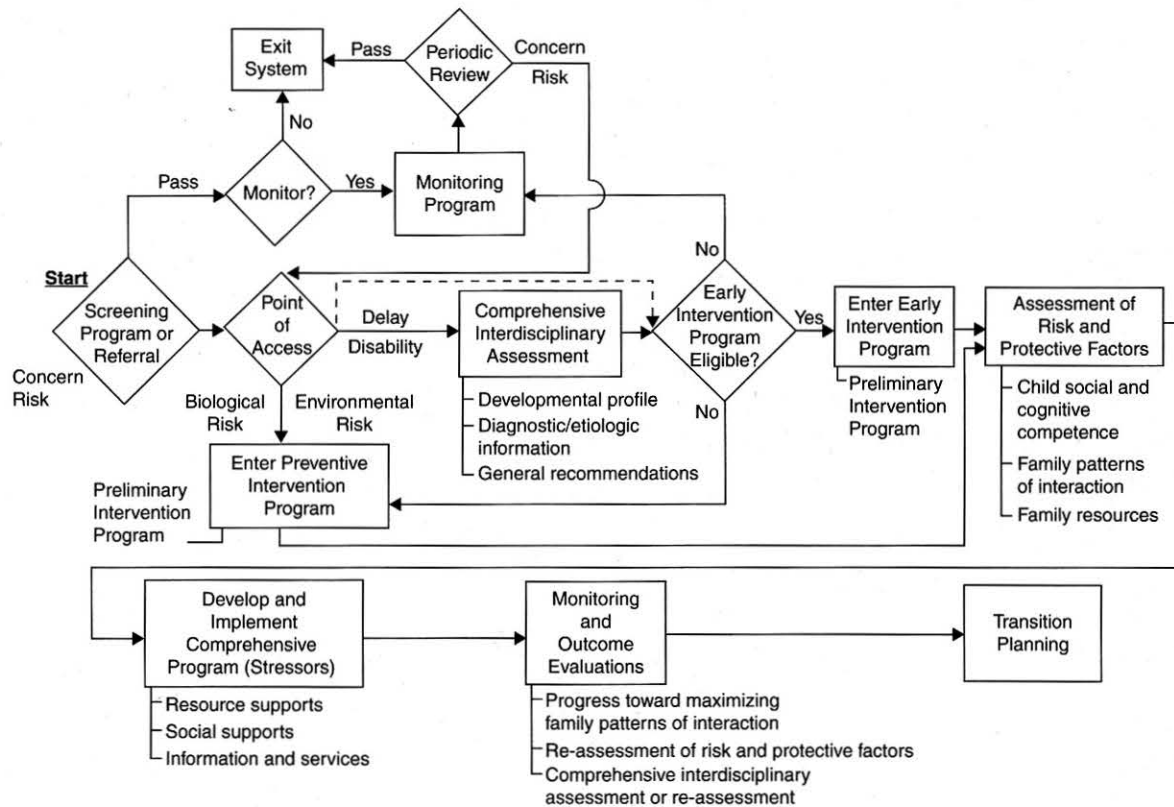


Figure 2.3 The developmental systems approach for early intervention in a proactive framework

Source: Modified from "A Developmental Systems Model for Early Intervention," by M. J. Guralnick, 2001, *Infants & Young Children*, 14, pp. 1-18. Copyright 2001 by Lippincott Williams & Wilkins.

similar demographic characteristics, attention must be given to individualise all components of the system to the unique characteristics of children and families. Ensuring that professionals recognise and understand cultural differences and can adjust their interactions accordingly is also a principle and value that can dramatically influence the outcome of any early intervention program. Similarly, evaluation and feedback mechanisms must be in place given the dynamic nature of development and the need to constantly adjust to optimise family patterns of interaction as much as possible. Finally, curricula and all intervention strategies must not only have evidence to support their effectiveness but must fit within the DSA into one or more of the components in Figure 2.1 and implemented in accordance with the principles just discussed. As a consequence, new interventions can be incorporated as part of the DSA's conceptual framework.

Conclusions

Major advances in the field of child development and the development of children at risk and those with established delays have found common ground in developmental and systems frameworks in recent years. The developmental systems approach is explicitly designed to integrate these perspectives focusing directly on the design, implementation, and evaluation of early intervention for vulnerable children and their families. The application of this approach to young children with developmental delays described in this chapter provides an example of how this might occur. The DSA's emphasis on families, including family patterns of interaction and family resources, with relationships as a core mechanism, provides the essential systemic structure. All of us in the field recognise the enormous challenges and complexities ahead, yet there is increasing evidence that progress can be achieved utilising this systems approach on an international scale (Bruder & Guralnick, 2012).

Implementation by interventionists on a routine basis will initially require gathering screening and assessment tools consistent with the DSA. This will allow a pattern of risk and protective factors to emerge that will form the basis for a comprehensive plan of intervention. Team processes are essential to utilise this information and transform it into day-to-day intervention activities at all levels of the DSA. Regular conferences and evaluations of progress including all involved are critical in order to maintain a focus on optimising family patterns of interaction.

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