

# Introduction to infant development

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## CHAPTER SIXTEEN

# Early intervention research, services, and policies

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### Introduction

Early intervention offers an opportunity to improve the developmental trajectories of infants and young children who are identified as having developmental disabilities or at risk for having developmental delay. New research on brain development has shown the tremendous benefit of providing intensive, comprehensive, continual services, beginning early in life. The purpose of this chapter is to present a context for understanding early intervention research, services, and policies. We first begin with an overview of early intervention in terms of what it involves, who is eligible, when it is conducted, and how it is implemented. International beliefs, practices, and social policies are discussed within this framework. Next, a review of the literature on early intervention research is presented, including sections on the benefits of early intervention, a brief overview of the origins of early intervention programs, and the scientific evidence of which programs are successful and why. Finally, a brief synopsis of new early intervention resources including books, journals, and websites is presented.

### Overview of early intervention

In general, early intervention refers to a comprehensive set of individualized services designed to meet the developmental needs of infants and young children and their families (Ramey, Ramey & Lanzi, in press a). The variety of early intervention programs and services is as varied as are the needs of the individual infants and young children. Definitions of early intervention and whether the label of 'early intervention' is used to define a program differ across cultures and countries.

A fundamental principle of early intervention is that it should begin as early in life as possible, and that it should be tailored to the specific needs of the individual infants and young children. Early intervention programs

involve a broad array of services. These can include: educational and medical services for diagnosis, evaluation and support; health and nursing services; nutrition counseling; psychological services; occupational and physical therapy; audiological and vision services; and assistive technology devices and services. Additionally, services can support the family in terms of family training, counseling, home visits, service coordination, special instruction, transportation, and related costs. The development of individualized service coordination varies, depending on the specific needs of the infants and young children and their family situations. A case manager often oversees the planning and service coordination that involves a team of professionals including pediatricians, pediatric neurologists, developmental pediatricians, physical therapists, speech-language therapists, social workers, psychologists, special education teachers, occupational therapists, audiologists, optometrists and ophthalmologists, nurses, nutritionists, and specialists who have received interdisciplinary or multidisciplinary training (Ramey, Ramey & Lanzi, in press a; Ramey, Echols, Ramey & Newell, 2000).

In the United States, infants and young children enter early intervention programs from birth through 5 years of age. Some programs, however, begin working with pregnant women before the birth of their child. During the first 2 years of life, services are commonly provided in the home or childcare environment on a weekly basis. Once the child reaches 2 years of age the transition from home to school-based early intervention should begin, and be completed when the child reaches 3 years of age. The school-based early intervention program offers a broader set of services including early counseling services, early identification and assessment, parent counseling and training, recreation, rehabilitation counseling services, school health services, social work services in schools, and special education (Ramey, Ramey & Lanzi, in press; Ramey, Echols, Ramey & Newell, 2000).

In other developed industrialized countries, 'early intervention' as a concept is not widely used. However, services that Americans endorse as part of early intervention are widely implemented and funded in other industrialized countries. Britain is the only European country that focuses on 'children in need' or 'children at risk.' Implemented in 1991, the Children Act of 1989 addresses the need for targeted interventions on children with special needs in the UK. Interestingly, other countries that belong to the Organisation for Economic Cooperation and Development (i.e., democracies with a market economy) have implemented social policies for all children rather than 'at-risk,' 'special needs,' or 'vulnerable' children. Countries included in this pact include the western European countries, the Czech Republic, Hungary, Poland, Japan, and Korea, among others. Their focus is on encouraging development rather than limiting it to the prevention of problems. Further, compared to the United States, the intervention strategy in most industrialized Western countries includes three key elements: adequate family income, sufficient time for parenting, and supportive care and services.

In other countries, although many services and activities exist, early intervention, but the practices of the communities and perspectives on early intervention present numerous examples around the world, including many common themes among them, including developing programs. Examples include:

- Jamaican mothers are encouraged to move the baby after birth, range-of-motion exercises, and disabilities (Thorburn, 1990).
- Community workers visit the home to work with the child on development.
- Operating through a community-based rehabilitation program, early intervention programs provide intervention. Further, in some countries, children's disabilities are addressed by habilitation workers through ceremonies (Teferra, 2003).

Building on Feuerstein (1990), Israel has implemented using the Mediational Intervention to support the development of learning (2003). Mediated learning

learning that occurs in the child and his or her environment as the ability and the need. The MISC model is the process

This practice has been adopted in Norway, Sweden, and the United States (K

The service delivery of the availability of these countries are advancing. Hanson, Blackman, and from the community are in the home. Germany and

In other countries, although not necessarily labeled as 'early intervention,' many services and activities are implemented with the same common goal of early intervention, but tailored to the specific cultural/traditional beliefs and practices of the community and family. In their book on international perspectives on early intervention, Odom, Hanson, Blackman, and Kaul (2003) present numerous examples of early intervention programs from around the world, including many developing countries. The authors note there are common themes among the cross-cultural early intervention programs, including developing programs that are culturally sensitive and relevant. Some examples include:

- Jamaican mothers and grandmothers have a special way holding and moving the baby after a bath consisting of 'stretching, tossing, molding, range-of-motion exercises' which may be important for babies with disabilities (Thorburn, 2003).
- Community workers in India use indigenous equipment and supplies found in the home to work with young children with cerebral palsy on their motor development.
- Operating through nongovernmental organizations in Ethiopia, community-based rehabilitation centers have begun 'door-to-door' home-based early intervention programs because most do not have access to early intervention. Further, in Ethiopia, raising awareness and acceptance of children's disabilities is important and is often done by community rehabilitation workers talking to mothers during community gatherings and ceremonies (Teferra, 2003).

Building on Feuerstein's theory of cognitive modifiability (see, e.g., Feuerstein, 1990), Israel has implemented a number of early intervention programs using the Mediation Intervention for Sensitizing Caregivers (MISC) model to support the development of children through mediated learning (Klein, 2003). Mediated learning refers to

learning that occurs in the presence of an adult who tries to mediate between the child and his or her environment to ensure that learning takes place. Intelligence is defined as the ability and the need to learn readily and 'easily' from one's experiences. The MISC model is the process through which this goal is achieved. (Klein, 2003, p. 76)

This practice has been adopted and implemented in many other countries including Norway, Sweden, Belgium, Holland, Ethiopia, Sri Lanka, Indonesia, and the United States (Klein, 2003).

The service delivery of early intervention is to a large degree a function of the availability of trained professionals to provide the services. Many countries are advancing new and different models of service delivery (Odom, Hanson, Blackman, and Kaul, 2003). For instance, in Jamaica, individuals from the community are trained to conduct screenings and provide support in the home. Germany and Portugal have implemented 'team-based' models

of training to maximize training efforts (Boavida & Carvalho, 2003). In Sweden, an interdisciplinary training program is conducted through distance education and in-service training (Björck-Åkesson & Granlund, 2003).

### Social policies and legislation

In the United States, early intervention services are mandated through federal legislation. The Education for All Handicapped Children Act of 1975 initially mandated services for children with disabilities. The Education for All Handicapped Act Amendments of 1986 provided additional funding for children aged 3–5 and funded the creation of a system of early intervention for children from birth through their third birthday. Early intervention services are currently funded by Part C (birth to 3 years) of the Individuals with Disabilities Education Act (IDEA) Amendments of 1997. Although federal legislation mandates services and provides funding, not all services are fully funded by federal dollars, and are supplemented with additional state funds. Private insurance and Medicaid are often billed for services. State and local programs must work together to raise additional dollars to meet the operating costs (Ramey, Ramey & Lanzi, in press a; Ramey, Echols, Ramey & Newell, 2000).

Federal legislation dictates that states define which risk conditions qualify children to receive early intervention as well as which services will be provided for specific diagnoses. The majority of states have a Child Find program to identify infants at risk for disability. There are, however, no uniform definitions or criteria for determining eligibility. The criteria for the cut-off point for defining a child with a disability vary from state to state. Although determination of eligibility varies, almost all assessments involve tests or procedures to determine a child's mental development and performance in areas such as motor development, socio-emotional development, language, and cognition. An individualized family service plan (IFSP) is required to be developed before the receipt of services. Family members and health professionals work together to identify the primary needs of the child and family, and how these needs can be best met (Ramey, Ramey & Lanzi, in press a; Ramey, Echols, Ramey & Newell, 2000).

The United States is well known for advancing the field of early intervention in terms of theory and research. Unfortunately, comprehensive social policies that address the early intervention needs of infants and young children in the United States are somewhat lacking. Although the federal law dictates children aged 3–5 years with disabilities have access to early intervention services and provides monies to the states to support the services, not all children eligible for services receive them. European countries, on the other hand, have not necessarily emphasized early intervention theory and research as a concept but have established social policies that exemplify the concept,

including progressive family home-health visiting and the extensive European social health care, and housing child and family services.

Increasingly, many countries support and services for infants include: South Korea's National Strategy to Combat social insurance system, Attention Centers as part of the other hand, does not have a national professional Nongovernmental organizations, often provide e.

### Benefits of early i

Numerous comprehensive studies over the past four decades have shown that children's development is significantly affected by the Needs of Young Children (Odom, Hanson, Black, Ramey, Ramey & Lanzi) in the development of intellectual and developmental disabilities and young children have intervention begins, the and produce desired outcomes necessary stimulation and compensate for the critical 1997; Ramey & Ramey those children living in development delays, an birthweight and premar Ramey & Lanzi, in press

Traditional, religious cross-purposes with the programs and services. It is a function of a parent an evil spirit or to supernatural treatment for their child

including progressive family policies concerning parental leave, childcare, home-health visiting and family support policies and programs. Additionally, the extensive European social policy infrastructure includes income transfers, health care, and housing assistance that provides a solid basis for supporting child and family services (Kamerman, 2000).

Increasingly, many countries are introducing legal changes to provide support and services for infants and young children. Examples of national laws include: South Korea's Promotion Law for Special Education; Egypt's National Strategy to Combat Handicaps; Sweden's establishment of a national social insurance system and the Child Health Services, with Child Rehabilitation Centers as part of the foundation for early intervention. Australia, on the other hand, does not have a national law; there grassroots efforts and a national professional organization have provided much-needed support. Nongovernmental organizations, funded from national and international sources, often provide early intervention services (Odom & Kaul, 2003).

### Benefits of early intervention

Numerous comprehensive reports of early intervention research over the past four decades have shown that early intervention makes a difference in children's development (see reviews by Carnegie Task Force on Meeting the Needs of Young Children report, 1994; Guralnick, 1997; Haskins, 1989; Odom, Hanson, Blackman & Kaul, 2003; Ramey & Ramey 1998, 1999; Ramey, Ramey & Lanzi, in press b). The first 5 years of life is a critical time in the development of infants and young children, particularly for those with developmental disabilities. It is during this time that the brains of infants and young children have the greatest capacity to change, and the earlier intervention begins, the more opportunity the brain has to make changes and produce desired outcomes. Unfortunately, if children do not experience necessary stimulation during the early years, their brains may not be able to compensate for the critical loss (see Carnegie Task Force Report, 1994; Shore, 1997; Ramey & Ramey, 1998, 1999). The scientific findings are clearest for those children living in poverty, who are at risk for cognitive and language development delays, and for children who are biologically at risk due to low birthweight and premature birth (Ramey, Ramey & Cotton, 1998; Ramey, Ramey & Lanzi, in press b).

Traditional, religious, or cultural beliefs and practices are sometimes at cross-purposes with the scientific findings undergirding early intervention programs and services. For instance, some may believe that a child's disability is a function of a parent's action or behavior, or that the disability is due to an evil spirit or to supernatural forces. In these instances, parents may seek treatment for their children from a shaman or a healer prescribing traditional

medicine. Of course, some treatments have positive effects for infants (e.g., physiotherapy with Ethiopian infants; Jamaican infant-handling routine after bathing babies); however, if traditional treatments are not helpful, effective early intervention services may be delayed or prohibited because of traditional beliefs (Odom and Kaul, 2003). A classic example of this was a Hmong family whose beliefs conflicted with the scientific medical community and whose daughter had severe disabilities. Unfortunately, the conflict resulted in tragic consequences for the daughter.

Odom and Kaul (2003) point out that conflict between traditional/religious/cultural beliefs and practices and scientific medical community occurs in the United States and other industrialized countries as well as in developing countries. For instance, some fundamentalist Christian beliefs dictate that a child's disability is a 'family burden from God' and that the family, rather than providers of early intervention services, should take care of their child. Interestingly, they note that what is scientifically acceptable or advanced as the appropriate treatment may not always prove to be correct. For example, in the 1960s Western science advocated that autism was a function of absence of emotional support from the mother, and the way to treat autism was to remove young children with autism from their families (Odom and Kaul, 2003).

### Origins of early intervention programs

Examination of how early experiences and intervention might impact children's healthy development has been under way for about 70 years. A group of psychologists firmly grounded in learning theory, including Donald Hebb (1949), J. McVicker Hunt (1961), and Harry Harlow (1958), began to explore the role and consequences of early experiences on children's cognitive, social, and emotional development, and other psychologists followed with scientific experiments. In the 1930s and 1940s a series of notable studies focusing on infants and young children living in orphanages showed that the care provided to children in institutions was woefully inadequate when compared with the loving, attentive care typically provided by a family. The work of Bowlby, Dennis, Goldfarb, Skeels, Skodak, and Spitz, among others, raised concern about the lasting harm caused by the lack of care and stimulation found in institutions. The seminal work of Skeels and Dye (1939) proved that early experience had the power to alter the development of intelligence and the life course of institutionalized retarded children. Their work launched vigorous scientific examination of what children need in order to ensure healthy growth and development. A series of carefully controlled experiments using animal models were implemented that uniformly varied the type and timing of early experiences. The first set of findings

from these studies revealed that children who were otherwise born with normal intelligence produced aberrant social behaviors (Landesman *et al.*, 1999).

A second set of experiments was conducted to determine whether nonoptimal environmental conditions could reverse or minimize the effects of institutionalization (Landesman *et al.*, 1999). This research showed that not all individuals who had been institutionalized showed mental conditions. In some cases, the interaction of the individual with a supportive environment upon the person as well as the individual's own characteristics, words, individual experiences, and environmental conditions, serve to modify the effects of institutionalization. Factors such as biological factors, social experiences, and deprivation can contribute to vary the effects of institutionalization.

In the early 1960s, research was conducted to determine whether early intervention could prevent suboptimal development in children living in poverty. The work of Zigler and Hodson (1962) showed that the work of the devastating consequences of institutionalization on educational opportunities. The following findings from the field research included:

- Evidence that rates of mental retardation with no previous institutionalization were higher in poor families (see Zigler and Hodson, 1962). It was also found that the pattern of institutionalization was related to the pattern of mental retardation (Zigler and Hodson, 1962).
- Strong associations between institutionalization and mental retardation measured by the residual IQ score (Zigler and Hodson, 1962; the amount and level of institutionalization and child's intellectual achievement (Zigler and Hodson, 1962; Vygotsky, 1978; studies conducted by Zigler and Hodson, 1962; Martin, 1983).
- Confirmation that institutionalization disrupted the once positive effects of learning at such a young age (Zigler and Hodson, 1962; these findings). The research showed that children who learned and how they learned from their learning experiences.

from these studies revealed that deficits in social and sensory experiences produced aberrant social, emotional, and learning behavior in animals that were otherwise born healthy and with a good genetic foundation (Sackett *et al.*, 1999).

A second set of experiments sought to understand how children responded to nonoptimal environments and the extent to which stimulation could reverse or minimize the negative effects of early deprivation, including institutionalization (Landesman & Butterfield, 1987). The work from these studies showed that not all individuals respond in a similar way to the same environmental conditions. In social ecology, this principle is referred to as the **person × environment interaction**, which means the impacts of what occurs depends upon the person as well as the event (e.g., Bronfenbrenner, 1979). In other words, individual experiences, not just the mere exposure to environmental conditions, serve to mediate and moderate the effects of early deprivation. Factors such as biological and genetic differences, the age when a child first experiences deprivation, the child's own behavioral propensities theoretically can contribute to varying individual responses to similar environments.

In the early 1960s, a third line of investigation was a proactive effort to prevent suboptimal development and developmental delay in children living in poverty. The work of these studies was propelled by a national awareness of the devastating conditions of poverty in the United States, the inequality of educational opportunities for children living in poverty, and scientific findings from the fields of child development and mental retardation. Key findings included:

- Evidence that rates of mental retardation, most especially mild mental retardation with no identified biomedical cause, were elevated among very poor families (see Garber, 1988 for a review of epidemiological findings). It was also found that this form of mental retardation had a strong familial pattern (Zigler, 1967) and had a time-distributed onset with progressive mental retardation (Deutsch, 1967; Klaus & Gray, 1968).
- Strong associations between the quality of a child's home environment—as measured by the responsiveness and sensitivity of the mother to her child, the amount and level of language stimulation, and direct teaching—and the child's intellectual and problem-solving capabilities (e.g., McVicker Hunt, 1961; Vygotsky, 1962). This finding has been confirmed in hundreds of studies conducted in the last few decades (see review by Maccoby & Martin, 1983).
- Confirmation that very young infants are capable of learning, which disputed the once prevailing view that infants were passive and incapable of learning at such an early age (see Osofsky, 1979 for an early summary of these findings). These studies identified a multitude of ways infants could learn and how these experiences impacted their responses to subsequent learning experiences (C. T. Ramey & Ramey, 1999).



The findings from these studies prompted the creation of early enrichment programs, most notably the American national program, Head Start, based on a broad platform of empirical findings and theoretical support (C. T. Ramey & Ramey, 1998; C. T. Ramey & Ramey, 2001.) (The British equivalent of Head Start is Sure Start, and similar programs are to be found in most Western societies.) The original and continuing goal of these programs has been to discover the value of early educational intervention as an antidote for environmental deprivation (McVicker Hunt, 1964).

### Early scientific studies

The first set of experiments testing the efficacy of providing enriched experiences for children at risk from impoverished homes was conducted in the late 1960s and early 1970s. Most took place in university child development centers, although they differed considerably in the amount and types of services provided, the age when children were enrolled, and the extent of risk among participants. Today, these programs are often labeled as compensatory in nature, in that they sought to offer elements found in many middle-class families, including responsive, educated caregiving; educational materials such as toys and games; nutritious meals; and a safe, stimulating environment where young children's thinking and problem-solving are actively encouraged. Although compensatory programs have sometimes been criticized because they implied a deficit model, in fact these programs appeared to be enacted with great care and concern for participants and were well received by the families. The Consortium for Longitudinal Studies was one such effort.

### The Consortium for Longitudinal Studies

The Consortium represented a collaborative effort involving 11 systematic studies that used experimental or quasi-experimental designs to determine the efficacy of early intervention programs for children at risk, based on socio-demographic characteristics (Darlington *et al.*, 1980; Lazar *et al.*, 1982). Several key findings evolved from this study. The first finding reaffirmed earlier reports that children participating in these high-quality early intervention programs made significant gains in intellectual and cognitive performance. In addition, there were long-lasting effects in terms of their academic school competence; attitudes and values; and impact on the family. The second and more controversial finding was that IQ scores for children were highest at the end of the intervention and were maintained for 3 or 4 years, but began to decline over time. This phenomenon is widely referred to as the **fade-out effect**. It is somewhat disappointing that this second finding is often the only one cited, rather than an acknowledgement of the lasting

benefits on children's retention (i.e., dropping out) in special education.

### Longitudinal early ir

In the 1970s, a number of studies were typically funded at high levels by publicly funded programs. One of the most well-known randomized trial research projects was the Perry Preschool Project of research. Randomized trials compare a new treatment with a control group with treatment and control groups. Randomized trials are no pre-existing and are conducted in addition, these five programs were withdrawing from the program at least into the middle 1990s. The Perry Project (C. T. Ramey & Ramey *et al.*, 2000), the Perry Preschool Project (C. T. Ramey & Ramey *et al.*, 1990; C. T. Ramey & Ramey *et al.*, 1997). All of the programs had at least one full year of intervention. The programs differed in the duration of the program, and

### Factors for success

What factors determine the success of preventing developmental delays? Four factors are identified: (1) duration of the intervention; (2) use of direct vs. indirect services; (3) use of direct vs. indirect services; (4) comprehensive services. Ramey & Cotton, 2001

### Timing and duration

Most early intervention programs are for low-income children and

evaluation of early enrichment program, Head Start, based on empirical support (C. T. Ramey et al., 1994). (The British equivalent studies are to be found in most of these programs has intervention as an antidote (Ramey et al., 1994).

providing enriched experiences was conducted in the late 1970s in a city child development center. The extent and types of services provided and the extent of risk among children were labeled as compensatory in many middle-class families. Educational materials such as reading materials were actively encouraged. Although criticized because they appeared to be enacted with little support received by the families, the program was such effort.

studies involving 11 systematic experimental designs to determine the extent of risk among children at risk, based on Ramey et al., 1980; Lazar et al., 1994. The first finding re-ported in these high-quality early intervention studies is that intellectual and cognitive effects in terms of their timing and impact on the family. That IQ scores for children were maintained for 3 or more years. This phenomenon is widely referred to as the second finding. The acknowledgment of the lasting

benefits on children's real-world indicators, such as lower rates of grade retention (i.e., dropping back a grade or class) and decreased rates of placement in special education.

### Longitudinal early intervention studies

In the 1970s, a number of model early intervention programs that were typically funded at higher levels and supervised more closely than large publicly funded programs were started. Five of these programs incorporated randomized trial research designs, which are considered the 'gold standard' of research. Randomized trials provide a more rigorous test of the impact of a new treatment by randomly assigning comparable types of children with treatment and control groups, thus eliminating potential selection bias factors. Randomized trials help researchers to be reasonably certain that there are no pre-existing and uncontrolled differences between the two groups. In addition, these five programs were relatively free of attrition (i.e., children withdrawing from the study) and gathered information on the children at least into the middle school year. These programs were the **Abecedarian Project** (C. T. Ramey & Campbell, 1984; Campbell & Ramey, 1994; C. T. Ramey et al., 2000), the **Infant Health and Development Program (IHDP)** (Ramey et al., 1990; C. T. Ramey et al., 1992), the **Milwaukee Project** (Garber, 1988), the **Perry Preschool Project** (Weikart et al., 1978; Schweinhart et al., 1993), and **Project Care** (Wasik et al., 1990; C. T. Ramey et al., 1995; Burchinal et al., 1997). All of these programs were multi-pronged and provided at least one full year of intervention before the children were 5 years of age. The programs differed in their enrollment selection criteria, the age children entered the program, and the amount and nature of the services.

### Factors for success

What factors determine the success of an early intervention program in preventing developmental delay, mental retardation, and poor school achievement? Four factors appear to make a critical difference: (1) timing and duration of the intervention; (2) intensity of services provided and received; (3) use of direct vs. indirect learning experiences; and (4) the provision of comprehensive services in addition to educational programming (Ramey, Ramey & Cotton, 2002; Ramey, Ramey & Lanzi, in press a and b).

#### Timing and duration

Most early intervention or 'school readiness' preschool programs for at-risk, low-income children begin at 4 years of age. The evidence shows, however,

that the earlier an intervention is started and the longer it is maintained, the more likely it is to produce greater benefits for participants. Successful experimental model programs such as the Abecedarian Project (C. T. Ramey & Ramey, 2000), the Brookline Early Education Project (Hauser-Cram *et al.*, 1991), Project CARE (Wasik, *et al.*, 1990), and the Milwaukee Project (Garber, 1988), enrolled children in infancy and continued at least until they entered elementary school. All produced significant benefits for children's cognitive, academic, and/or language performance.

### Intensity of services

Unfortunately, many early intervention programs do not demonstrate change in children's intellectual and academic performance. An examination of these programs show they are not intensive, as indicated by the hours per day, days per week, and weeks per year of educational services provided. The Utah State Early Intervention Research Institute conducted 16 randomized trials of early intervention programs for special needs children and found that none of the programs produced significant effects on children's development. None of these 16 programs provided a full-day, 5-day per week program. Scarr and McCartney (1988) also failed to produce positive cognitive effects when they provided a parent-oriented, once-weekly intervention with economically impoverished families in Bermuda. Two home-visiting programs, however, showed that intense programs can make a difference. First, an early intervention home-visit program that provided services 3 days a week produced significant benefits, while the same program offered at a less intense level was not successful (Powell & Grantham-McGregor, 1989). Second, the Brookline Early Education Program (Hauser-Cram *et al.*, 1991) found that only the most intensive two-generation model they provided was adequate to benefit children at risk for school difficulties, while the lowest intensity program had no measurable consequences. The Infant Health and Development Program (1990) examined intensity at the individual level. It was found that the amount of services received had a strong positive relationship to the child's social and intellectual development at 36 months of age (C. T. Ramey *et al.*, 1992).

### Direct vs. indirect services

Successful early interventions can be provided to children and/or families in a variety of forms. Some offer **direct services** to children in the form of classes in a child development center. Others may offer early intervention services to children by a more indirect method, most often a home-visiting program where trained personnel work with parents to inform them about how to promote children's development or where parenting classes (groups) are offered. Some programs provide a combination of these types of services.

The scientific literature on indirect methods are focused on enhancing children's intellectual and academic performance in varying backgrounds (C. T. Ramey & Ramey, 2000). Project CARE found that weekly home visits produced significant benefits for children's social development, particularly in the home environment. Although there is some debate about parents in their children's lives, there is no doubt to whether such progra

### Comprehensiveness

Early interventions that are comprehensive and that include services for both children and families are more effective than those that focus only on children. For example, the Project, the Brookline Early Education Project, the Infant Health and Development Program, and the Infant Health for Child Health (Guterman, 1990) for families and used more comprehensive services. Interestingly, Romanian children in orphanages who were part of a program introduced comprehensive services including stable family focus on enriched caregiving (Ramey & Florescu, 2000).

### New early interventions

As we have described in this chapter, a variety of early intervention programs and policies to address children's development. Accordingly, new research is focusing on early intervention, *Infants and Young Children*, *International Journal of Early Childhood Education*, and the *Early Childhood Education* series. Recent books are: *Early Childhood Intervention and Regional Practice* (

longer it is maintained, for participants. Successful interventions include the Abecedarian Project (C. T. Ramey et al., 1991), the Milwaukee Project (Hauser-Cram et al., 1991), and the Milwaukee Project continued at least until they no longer demonstrated benefits for children's

to not demonstrate change

An examination of these interventions was conducted by the hours per day, the intensity of services provided. The study conducted 16 randomized controlled trials with children and found that more intensive interventions had a positive effect on children's development. For example, a 10-hour per week program had a positive cognitive effect compared to a 5-hour per week intervention with eco-home-visiting programs, but there was no difference. First, an intervention of 3 days a week was offered at a less intense level (Ramey et al., 1989). Second, the study (Ramey et al., 1991) found that the intensity of services provided was adequate while the lowest intensity intervention had a significant relationship to the child's cognitive development (C. T. Ramey

and/or families of children in the form of home-visiting or parenting classes (groups) of these types of services.

The scientific literature examining the effects of these strategies are clear: indirect methods are far less powerful than direct approaches in terms of enhancing children's intellectual and social development for children from varying backgrounds (Madden *et al.*, 1976; Scarr & McCartney, 1988). Project CARE found that combining daily center-based intervention with weekly home visits produced significant gains in cognitive development, whereas the group that had regular home visits (indirect method) over a 5-year period had no documented benefits on children's cognitive and social development, parent attitudes or behavior, or the quality of the home environment. Although it is important to recognize and celebrate the role of parents in their children's development, careful consideration should be given to whether such programs actually produce adequate positive child benefits.

### Comprehensiveness of services

Early interventions that adopt a broad multi-pronged approach to working with children and families in order to enhance children's development are more effective than those that have a more narrow focus. The Abecedarian Project, the Brookline Early Education Project, Project CARE, the Milwaukee Project, the Infant Health and Development Program, and the Mobil Unit for Child Health (Gutelius *et al.*, 1977) all provided comprehensive services for families and used multiple routes to enhance children's development. Interestingly, Romanian and American researchers have shown that Romanian children in orphanages who are at risk for developmental delay benefit greatly from a program introduced early in life that involves a broad spectrum of services including stable adult-child relationships, small group size, and a focus on enriched caregiving and educational activities (Sparling, Dragomir, Ramey & Florescu, 2005).

### New early intervention resources

As we have described, early intervention research has been investigated for quite some time, and more and more countries are enacting programs and policies to address the developmental needs of infants and young children. Accordingly, new journals, books, and websites have been developed focusing on early intervention. Journals include the *Journal of Early Intervention*, *Infants and Young Children*, *Topics in Early Childhood Special Education*, *International Journal of Rehabilitation Research*, *Exceptional Children*, and the *Early Childhood Research Quarterly*. Examples of recent books are: *Early intervention: The essential readings* (Feldman, 2004); *Early childhood intervention: International perspectives, national initiatives, and regional practice* (Carpenter & Egerton, 2005); and *Early intervention*

*practices around the world* (Odom, Hanson, Blackman & Kaul, 2003). The International Society on Early Intervention maintains a list of early intervention resources, including publications and useful websites; visit their site <[http://depts.washington.edu/lisei/resources\\_links/links.html](http://depts.washington.edu/lisei/resources_links/links.html)> for details.

The Division for Early Childhood is one of 17 divisions of the Council for Exceptional Children, which is the 'largest international professional organization dedicated to improving educational outcomes for individuals with exceptionalities, students with disabilities, and/or the gifted.' The Division for Early Childhood has a particular focus on people who work with or for children with developmental concerns from birth through 8 years. They are dedicated to promoting programs and policies centered on supporting children and families. The Division of Early Childhood recently published a series of recommended practices (see Sopris West <[www.sopriswest.com/](http://www.sopriswest.com/)> for publications).

## CHAPTER SEVENTEE

# Culture and

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### Introduction

Consider two infants, born in the same hospital, or perhaps in the same family. Both will develop attachment relationships with their families and friends. Some of them will develop characteristics that are universals in development, such as the ability to form attachments into which these infants invest. The interesting variation in attachment figures, however, is in what kinds of cognitive and emotional relationships they form.

In this chapter, we will work for exploring both attachment and development. We describe then use exemplars from regularities in variation in infant caregiving and learning, situated within these structures.

### Cultural perspectives

There is widespread agreement that Human infants experience require extensive caregiving themselves. It is this universality to understand human development. Rogoff (2003) emphasizes