



Michigan Family Impact Seminars



Child Care and Education

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Child Care and Education

Michigan Family Impact Seminars Briefing Report

Edited by

Nancy Walker, Associate Director
Marguerite Barratt, Director
Institute for Children, Youth, and Families
Michigan State University

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Copies of this report are available from
Institute for Children, Youth, and Families
Michigan State University
Suite 27 Kellogg Center
East Lansing, MI 48824
Phone: (517) 353-6617
Fax: (517) 432-2022

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Executive Summary

Nancy Walker

Children learn all day every day from the experiences that surround them. It is our responsibility as adults to assure that what they learn educates them for success.

Today, many infants and young children in Michigan—as in other parts of the United States—spend much of their early lives in child care arrangements that vary widely in type, setting, and quality. Is Michigan using what researchers know about child care to optimize children's education and to spend taxpayer dollars wisely? Research findings suggest that funds invested in quality child care are well spent. For example, for at-risk families, the positive outcomes of high quality child care have been estimated to result in a return-on-investment for each dollar spent of at least two dollars, and perhaps as much as seven dollars.

This issue of the *Michigan Family Impact Seminar Briefing Report* addresses the issue of child care and education. First, we provide an overview focused on Michigan facts and figures. Next, we provide summaries of cutting-edge research findings, presented by nationally renowned experts, on three topics: (1) early intervention child care for at-risk families, (2) the nature of child care in the United States, and (3) after-school care.

Overview

Quality of child care is vitally important. A growing body of research evidence indicates that quality of child care is strongly related to the course of children's development. High quality care is associated with higher cognitive development, better communication skills, greater school readiness, more positive emotions, fewer behavior problems, and decreased need for special education. Quality care also is related to long-term positive effects such as higher graduation rates, higher employment rates and income levels, and lower arrest rates. According to research, child care centers in states with more stringent quality standards provide better quality care.

Factors associated with quality care include the ratio of children to adults, the size of the groups that children are in, and the education of the child care providers. For example, the American Public Health Association and the American Academy of Pediatrics recommend that one adult care for no more than 3 infants, or no more than 7 three-year-olds. Research indicates that child care staff with more education and higher pay provide better care. Michigan currently has no educational standards in place for child care teachers, and the median hourly wage for child care workers in the state is \$6.85. Only 3% of child care centers in Michigan meet the accreditation standards recommended by the National Association for the Education of Young Children (NAEYC) and only 2% of Family Independence Agency child care monies are spent on improving the quality of care.

Michigan has approximately 4,800 licensed child care centers and 15,800 licensed/registered family child care providers. Together, these programs are able to provide care for 80% of the more than 430,000 children who need it. Shortages of care are particularly pronounced in the areas of infant care, care for children with special needs, and care in the evening or at odd hours. The average cost of full time child care in Michigan is \$5,005 per year, a cost that exceeds the budgets of many families; yet, more than 40% of the 163,000 Michigan families eligible for child care subsidies are not using them.

Children, families, communities and taxpayers all can benefit when the knowledge gleaned from high quality research studies is used to ensure

that child care in Michigan is educational and of high quality. Such programming supports children's social and emotional development, facilitates children's learning through appropriate play experiences, encourages cognitive development and language enrichment, reduces problem behaviors, supports families, and constitutes wise investment of public funds.

The overview chapter concludes with a set of sample policy options.

Research on Child Care

Intervention Beginning in Infancy. Dr. Craig Ramey, principal investigator of the "Abecedarian Project," describes an early intervention child care program that compared infants from low-income, high-risk families who were randomly assigned to a high-quality child care setting with infants in a non-treated control group. By following the children's progress through age 21, the study found that high-quality, multi-faceted early intervention significantly improves the course of intellectual development in young children. Positive effects included higher IQ and cognitive performance; improved language; fewer instances of grade retention; decreased need for special education; higher reading and math achievement scores; higher levels of formal education; delayed parenthood; and, for teen mothers, higher rates of post-high school education. In replications of the Abecedarian Project, researchers found that children who were at the highest risk benefited the most from early intervention. Dr. Ramey concludes this chapter with a discussion of policy implications of the Abecedarian Project findings.

National Study of Child Care. Dr. Kathleen McCartney, one of the principal investigators of the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care, describes the most comprehensive child care study ever conducted in the United States. The NICHD Study was designed to assess the effects of various child care arrangements on child development. More than 1,300 children in 10 states were enrolled in the study in 1991 and their progress documented for a seven-year period. Dr. McCartney and her colleagues found that (1) most child care programs for children at 24 and 36 months do *not* meet the recommended guidelines for aspects of care that can be regulated; (2) the number of hours children spend in child care varies by ethnicity, with white non-Hispanics averaging the fewest hours of care and black non-Hispanics the most; (3) higher quality child care is associated with more positive outcomes whereas lower quality child care is associated with more negative outcomes; (4) children from families at the lowest and highest income levels received higher quality of care than those in the middle income and near-poor ranges; (5) families more dependent on a mother's income placed their infants in child care at an earlier age and used more hours of care than families less dependent on a mother's income; and (6) family and home characteristics are stronger predictors of many outcomes than are children's experiences in child care.

After-School Care. Dr. Mary Larner, policy analyst and editor for the David and Lucile Packard Foundation, discusses the problem of out-of-school care for children beyond the infancy and preschool years. She summarizes current research indicating that, while all children need safe out-of-school care, the need is especially great for children ages 5 to 9 and children living in low-income neighborhoods. Children, families, and communities all benefit when children are in supervised programs after school. Benefits include higher grades in school and improved work habits and social skills, as well as reduced rates of crime and risky activities such as drug or alcohol use and sexual contact. Currently, however, four major barriers hamper delivery of after-school services to children: (1) inadequate funding, (2) under-qualified and high-turnover staff, (3) inadequate and/or inappropriate space, and (4) lack of long-term evaluations of program impact. Recent polls show that most voters believe that organized activities for children and teens should be provided after school, and that most voters are willing to pay more in taxes to increase the availability of such programs.

Overview: Child Care and Education

Stephanie Jacobson and Marguerite Barratt

Why Focus on Child Care and Education?

Almost one-half of Michigan children under the age of five receive some kind of early childhood education and care from someone other than a parent [36]. Relatives care for more than half of these children. Some are in informal and unlicensed care and some are in regulated family child care and child care centers.

Public focus on the experiences of children in their child care settings has heightened in response to a growing awareness that these early experiences are critical for the future success of children. In short, child care is no longer about babysitting children so parents can work. Rather, child care is “about giving kids the environment that best promotes their development” [24].

Thus, child care settings can function as early classrooms, and child care providers can serve as educators. Several intervention studies of early childhood care have shown that intentionally providing educational experiences to children early in their development has lasting impacts.

A Michigan example is the High/Scope Perry Preschool Project which randomly assigned half of 123 at-risk preschool children to receive a specific high quality preschool program [42, 43]. Follow-up data to age 27 indicate differences in the areas of graduation rates, arrest rates, income, employment rates, and marriage length [42] that favor the children in the program. Similarly promising results have been found by the Abecedarian Project in North Carolina [39], which is highlighted later in this report.

After-school care is also currently high on the public agenda. With too many children regularly coming home to empty houses, there is wide support for government-funded after-school programming to provide children with safe places and enriching activities. Educators also have noted the potential for extending learning in the hours after school is dismissed [25]. The issues surrounding after-school care are discussed in greater depth later in this report.

Child Care in Michigan

- In the state of Michigan, of children whose parents work, approximately 50% under the age of six and 75% between the ages of six and twelve are cared for by relatives. This leaves about 430,000 children in Michigan needing non-family care, 260,000 under the age of six, and another 170,000 between the ages of six and twelve [46].
- There are about 4,800 licensed child care centers and 15,800 licensed/registered family child care providers in Michigan. Together, these providers are able to serve approximately 80% of the children who need care [46].
- The Family Independence Agency (FIA) supplements the costs of care for low-income families. Licensed care is funded, but FIA actually spends most of its child care money on informal care provided in a relative's home and care in the child's home provided by a relative or non-relative [10].
- The average cost of full time child care in Michigan is currently \$5,005 per year [46]. Nationally, average costs range from \$3,000 to \$8,000

Child care is no longer about babysitting children so parents can work. Rather, child care is about giving kids the environment that best promotes their development.

The average cost of full time child care in Michigan is currently \$5,005 per year.

per year for one child in an urban child care center, making it unaffordable for many low-income families [41].

- An estimated \$3 billion is spent annually on early childhood education and care in Michigan. State and federal expenditures account for about \$1.56 billion, and nearly \$1.49 billion is provided directly by the parents and relatives of children needing care [36].
- The median wage for Michigan child care professionals is \$6.85 per hour [36].

Why is Quality Care Important?

For children

A growing body of research evidence indicates that quality of child care is strongly related to the course of child development. Specifically, child care of higher quality has been shown to benefit children in the following ways:

- **Social skills.** Children ages 1 to 4 have been shown to have better relationships with teachers and greater social competence with peers [21]. Further, children are happier, showing more positive emotions [15], and have been shown to have fewer behavior problems at age three [34].
- **Language and communication skills.** 12-month-olds have higher levels of language development and communication skills [6]. Two- and three-year-olds have higher language comprehension scores [34].
- **Cognitive skills.** 12-month-old infants have higher levels of cognitive development [6]. Two- and three-year-olds have greater school readiness, that is, greater knowledge of colors, letter identification, numbers, comparisons, and shapes [34]. First-graders make greater academic progress [19].
- **Long-term effects.** Positive long-term effects include higher graduation rates, employment rates and income levels, and lower arrest rates at age 27 [42].

For families

Quality child care providers not only enhance the educational achievement of children, but trusted providers also may work with parents to increase their level of knowledge about their own child's development [24].

Furthermore, families with dependable child care are more likely to have stable employment experiences. Disturbances in child care can cause parents to miss work or leave their jobs [45]. Brandon [5], who combined the results of several large surveys, found that about half of parents reported that an absence of child care had reduced their job performance. Brandon also found that 30 percent of parents were "very worried" and 15 percent were "somewhat worried" about having adequate child care when they went to work.

For the public

Finally, there is clear evidence that funds invested in quality child care are well spent. Schweinhart conducted a cost-benefit analysis in Michigan in conjunction with the High/Scope Perry Preschool Project. This study, briefly described above, offered a high quality part-day preschool program to 58 at-risk children and made home visits to their families. The average total cost of services per participant was \$12,356 for services that lasted one or two years [42].

The median wage for Michigan child care professionals is \$6.85 per hour.

Families with dependable child care are more likely to have stable employment experiences.

The net benefits to the public were calculated to be \$76,077 per participant. These savings resulted from:

- Reduced special education costs
- Increases in tax revenues due to higher incomes
- Reduced welfare costs
- Reduced costs to the criminal justice system
- Reduced court costs for would-be crime victims

Thus, for every dollar spent on the High/Scope Perry Preschool Project, an estimated \$7.16 was returned to the public [42].

In 1998, Karoly and colleagues [22] reconsidered these figures, this time leaving out the savings of potential crime victims. Their estimates were more conservative, but the savings per participant were still estimated at over \$25,000, which is **more than a two dollar return for every dollar invested** in the program. Thus, even conservative estimates confirm the cost effectiveness of investing in quality early child care for children who are at risk.

Unfortunately, most children are receiving poor quality care, according to several national studies.

What Constitutes Quality Child Care?

Unfortunately, most children are receiving poor quality care, according to several national studies. A recent study shows that only 10% to 12% of child care programs for children ages 6, 15, and 24 months met four standards (ratio, group size, teacher training, and college education) for quality programs outlined by the American Public Health Association (APHA) and the American Academy of Pediatrics (AAP). Only 34% of classes for 3 year olds met the standards, and for 6 and 15 month olds, almost 20% of the centers failed to meet *any* of the standards [32, 34].

Another national study found that only 9% of children in family day care homes or in the care of relatives were receiving quality care, with quality care defined as care that was growth enhancing [12]. The low quality of family child care is, in part, due to many family day care homes that are unknown to regulators [54].

The growing consensus in the research is that there are three critical components of quality child care programs [54]:

- Trained child care providers, that is, those who have relevant formal education as well as specific early childhood education training [20]
- Low child-to-adult ratios
- Small group sizes

The National Association for the Education of Young Children (NAEYC) has adopted the ratio and group size recommendations shown in Figure 1. NAEYC accredits child care centers that meet their group size and ratio recommendations as well as program quality standards; only 3.2% of Michigan child care centers are accredited by NAEYC.

The APHA/AAP standards have a more specific focus on issues of children's health and safety in child care programs [2]. These ratios and group sizes are more stringent than those developed by NAEYC (also see Figure 1).

The third component of quality child care, provider training, now is being regulated by some states as well. Basic degrees are required for caregivers in some states. For example, Wisconsin requires providers to have at least a high school education and 40-contact-hours of a course in child development or early childhood education. National recommendations (NAEYC, APHA/AAP and Head Start), as well as some states, recommend continuing education for child care teachers each year.

There are three critical components of quality child care programs:

- ***Trained child care providers***
- ***Low child-to-adult ratios***
- ***Small group sizes***

Michigan standards

Michigan currently has no educational requirements in place for child care teachers, or family care providers, although it does require directors of programs to have 60 college semester hours, with at least 12 of those hours in child development or early education.

Michigan's standards for child-to-adult ratios for center child care and family child care providers are included in Figure 2. They are less stringent than NAEYC, AAP, and APHA standards (compare to Figure 1).

Michigan currently has no educational requirements in place for child care teachers or family care providers.

How is Child Care Quality Assessed?

The structural characteristics mentioned above are important because they set the stage for the interactions between children and caregivers. In child care centers with lower child-to-adult ratios, providers are more likely to provide warm and sensitive caregiving [21]. Teacher training also has been shown to improve caregiving interactions between children and their child care providers [20]. For example, child care teachers have been shown to be less harsh when they have at least an associates' degree, and to be even more sensitive when they have a bachelors' degree in early childhood education. Child care teachers with a Child Development Associate (CDA) certificate have also been shown to initiate more positive interactions with children than those without.

One widely used assessment of child care quality specifically for infants and toddlers is called the Infant/Toddler Environment Rating Scale [14]. This scale assesses several dimensions of center-based care including:

- Physical environment
- Daily routine
- Caregivers' balance of listening and talking with children
- Learning activities
- Child interactions with caregiver and peers
- Program schedule and structure
- Provisions for staff and parents

In child care centers with lower child-to-adult ratios, providers are more likely to provide warm and sensitive caregiving.

Age	Child to Staff Ratio	Maximum Group Size
<i>NAEYC Recommendations</i>		
Infants (0-12 mos.)	4:1	8
Toddlers (12-24 mos.)	5:1	12
2 year olds	6:1	12
2-1/2 year olds	7:1	14
3-5 year olds	10:1	20
<i>APA and APHA Recommendations</i>		
0-24 mos.	3:1	6
2 - 2-1/2 year olds	4:1	8
2-1/2 - 3 year olds	5:1	10
3 year olds	7:1	14
4-5 year olds	8:1	16

Figure 1. NAEYC, APA and APHA Recommendations

From among these, the interactions between caregivers and children are perhaps the most crucial. Children’s learning in child care settings takes place in the context of relationships as caregivers support learning through play.

Affordability and Availability

Child care supply and demand rests on an ongoing balancing of quality with affordability and availability. Any change in one of these factors affects the other two.

Availability

There are pronounced shortages of certain types of care in Michigan [46]. These include:

- Infant care
- Care for children with special needs
- Care in the evening or at odd hours
- After-school care

Too many children—more than 10 percent between the ages of 8 and 10 and more than 30 percent between the ages of 11 and 12—are in self-care, that is, caring for themselves alone at home on a regular basis. Furthermore, national figures indicate that one percent of preschool-aged children also are regularly left alone [17].

Affordability

The burden of child care costs is particularly pronounced for low-income families. One national study found that children living near poverty actually receive lower quality child care than children in poverty, presumably because they do not qualify for child care subsidies [31].

Child care supply and demand rests on an ongoing balancing of quality with affordability and availability.

There are pronounced shortages of certain types of care in Michigan:

- ***Infant care***
- ***Care for children with special needs***
- ***Care in the evening or at odd hours***
- ***After-school care***

Age Range	Ratio
<i>Center-Based Care</i>	
Infants (up to 30 months)	4:1
2-1/2 to 3 years	10:1
4 to 5 years	12:1
6 to 12 years	20:1
13 to 17 years	30:1
Mixed age group	Ratio for youngest child in group
<i>Family Child Care Providers</i>	
All ages	6:1 (Includes family members under 7 years old; no more than 4 children under 30 months and no more than 2 of those children can be under 18 months)

Figure 2. Michigan Child-to-Adult Ratio Standards

Of 163,000 children who are FIA-eligible for child care assistance, only 86,000 are receiving subsidies.

It is also true that families eligible for child care assistance often do not receive any actual assistance. In Michigan, more than 4 of 10 children eligible for FIA child care assistance are not receiving any. In other words, of 163,000 children who are FIA-eligible for child care assistance, only 86,000 are receiving subsidies [46].

A new study reports that as mothers are moving from welfare to work, their children are moving into low-quality care settings [11]. The same study, based on research conducted in California, Connecticut, and Florida, reports that child care subsidies are only used by between 13% (Connecticut) and 50% (Florida) of eligible mothers, and that subsidies encourage the utilization of unlicensed care.

What Are the Policy Options?

Several policy considerations exist for improving child care quality and making it more supportive of children's development. Five sample strategies are listed below.

1. Funding

FIA's budget for child development and care services is approximately \$600 million in fiscal year 2000. The bulk of FIA funds are spent on funding for families needing assistance, and the biggest portion of this money is spent on relative care, followed by aide care (a relative or non-relative taking care of the child in the child's home) and center child care.

Approximately 2% of FIA's budget for child development and care is spent on improving child care quality in Michigan. This money is allocated to child care provider training, child day care resource and referral services, and child day care licensing staff support [10].

A compilation of several large surveys has indicated that the public widely supports using public funds for the expansion of early care and education [5]. Some states, including Michigan, use surplus Temporary Assistance to Needy Families (TANF) funds to help families pay for child care. Another promising state initiative is California's Proposition 10, which raises \$750 million per year via cigarette taxes to give to local communities for early childhood services [8]. Public money could subsidize parent fees, staff wages, center operation costs, and equipment.

The public widely supports using public funds for the expansion of early care and education.

2. Licensing and regulation

A growing concern in Michigan is that there are only approximately 100 licensing staff to review the almost 21,000 programs, resulting in a caseload of approximately 200 programs per worker [46]. This means that programs may be visited less than once a year, threatening the quality of licensed care in the state. One strategy used by the U.S. Department of Defense to improve child care quality has been quarterly unannounced inspections [49], and some states require regular unannounced visits.

Research shows that child care centers in states with more stringent quality standards do provide better quality care [20]. Most states currently have minimal standards, and the recent trend has been for states to increase these standards. Some state regulations include a tiered system where better quality programs are publicly acknowledged.

3. Curriculum

Improvements in the quality of Head Start have been partly driven by the adoption of the national Head Start Performance Standards and by the expectation that each program will adopt a curriculum to guide implementation of the Performance Standards. Similarly, the Michigan School

Readiness programs are guided by programming guidelines [28] and the Early Childhood Standards of Quality [29].

Michigan authors have written two exemplary texts on early childhood curriculum. The High/Scope Educational Research Foundation has published its approach to early childhood education in *Educating Young Children* [18]. Another excellent text on the topic, *Developmentally Appropriate Curriculum: Best Practices in Early Childhood Education*, was written by early childhood scholars at Michigan State University [23].

4. Training and education

One hundred years ago, a college degree was not required for teaching school, but those days are in the distant past. Research consistently indicates that better educated child care staff provide better care [20].

Michigan does not require even a high school education to work as a child care provider, although it does use public funds from quality improvement money to pay for 15-hour basic and advanced training courses for child care staff. Some states have created a central registry to keep track of the training and education of child care providers (e.g., Wisconsin). Other states support the movement towards Child Development Associates credentials for child care staff (e.g., Florida), and some states (e.g. Oklahoma) require continuing education for child care staff [9].

Research consistently indicates that better educated child care staff provide better care.

5. Technical assistance

There is also potential for the quality of child care to be improved by technical assistance in the form of educational materials and consultations. For example, the state of Texas provides a monthly magazine for each licensed child care facility. In Michigan, videos and booklets can be obtained from regional licensing offices and regional resource and referral offices (Michigan Coordinated Child Care Council). Technical assistance is rarely available in the form of consultants who can advise child care programs, mentors who can guide new child care providers, and support groups for directors and staff, yet these options have the potential to improve quality.

Dr. Craig Ramey is Professor and Director of the Civitan International Research Center at the University of Alabama at Birmingham. He has presented his findings, based on research with 14,000 children and families, in over 40 states, at 10 state legislatures and at the National Governor's Association, the National Conference of State Legislatures, the National Association of Attorneys General, and the Council of Chief State School Officers. Dr. Ramey is the recipient of the American Psychological Association's Award for Exemplary Prevention Research.



Why Early Childhood Intervention is a Key Investment for State and Local Policymakers

Craig Ramey

The Abecedarian Project compared infants from low-income families who were randomly assigned to a high-quality child care setting with infants in a non-treated control group. Families in the study had multiple risk factors in addition to poverty. By following the children's progress through age 21, the study found that high-quality, multi-faceted early intervention significantly improves the course of intellectual development in young children. Positive effects included higher IQ and cognitive performance; improved language; fewer instances of grade retention; decreased need for special education; higher reading and math achievement scores; higher levels of formal education; delayed parenthood; and, for teen mothers, higher rates of post-high school education. In replications of the Abecedarian Project, researchers found that African-American, Hispanic and Caucasian children who were at the highest risk benefited the most from early intervention.

The Problem

Young children who live in poverty lag behind their peers from their earliest school years and poor children often do not enter school adequately prepared for success [1]. In attempts to improve the academic odds for low-income children, many types of early childhood education programs have been developed. These programs are based on the idea that providing early intellectual stimulation should enhance cognitive development, allowing children to enter school better prepared to learn. Increasing the likelihood of early school success, in turn, eventually should result in increased success in adulthood. However, few early childhood programs have been scientifically controlled in such a way that researchers could evaluate the extent to which long-term outcomes result from the program itself rather than other forces. Experiments that include these controls are the best because they can prove a cause and effect relationship.

High-quality, multi-faceted early intervention significantly improves the course of intellectual development in young children.

What Is the Abecedarian Project?

The Abecedarian Project, conducted at the University of North Carolina in Chapel Hill, was a carefully controlled study of 57 infants from low-income

Children in the Abecedarian program had five years of exposure to early education in a high-quality child care setting, whereas most other programs are of shorter duration.

High Risk Characteristics of Abecedarian Families

Poverty
 Low maternal IQ
 Low maternal education
 Single parent families
 Teen motherhood
 Authoritarian child-rearing attitudes
 External locus of control

Figure 1. High Risk Characteristics of Abecedarian Families

families who were randomly assigned to receive early intervention in a high-quality child care setting, and 54 infants in a control group that did not receive the treatment. Families in the study had multiple risk factors in addition to poverty (Figure 1), including mothers who had lower IQs, mothers who had low levels of formal education, single-parent families, teen mothers, and authoritarian child-rearing attitudes [39]. Children's progress was monitored in follow-up studies at ages 12, 15 and 21.

Like other high quality early childhood programs (such as Project CARE and the Infant Health and Development Program), the Abecedarian Project had these program features:

- A multidisciplinary, intergenerational, and individualized approach;
- Programming that was embedded in local service delivery systems;
- Preschool treatment that included family support social services, pediatric care and referral, center-based early childhood education, and supplemental meals and snacks;*
- A low child/teacher ratio;
- Year-around programming every weekday from 7:30 a.m. to 5:30 p.m. that met or exceeded the standards of the National Association for the Education of Young Children (NAEYC);
- Daily transportation; and
- Developmentally-appropriate activities consisting of games incorporated into the child's day that focused on social, emotional and cognitive development, with a particular emphasis on language.

The Abecedarian Project differed from other early childhood programs in that:

- It began in early infancy, whereas other programs begin at age 2 or older; and
- Children in the program had five years of exposure to early education in a high-quality child care setting, whereas most other programs are of shorter duration.

What Positive Effects Result from High Quality Early Intervention?

As Figure 2 shows, the Abecedarian study found that high-quality, multi-faceted early intervention significantly improves the course of intellectual development in young children. Positive effects resulting from the project included:

- **Higher IQ, enhanced learning performance, and improved language development**

Young adults who had received intervention had significantly higher cognitive test scores than their untreated peers, effects that lasted from toddlerhood through age 21.

*It should be noted that, for ethnical reasons, children in the control groups of these studies also received family support social services, pediatric care and referral, and supplemental meals and snacks. The findings of the Abecedarian Project, therefore, actually are conservative estimates because the program was carried out in a high-resource community with lots of other services. Thus, the program was compared to a control group which received more services than many programs provide.

■ **Decreases in grade retention**

Those in intervention had a 30% retention rate by age 15, compared with 56% in the control group.

■ **Decreased need for special education**

Only 12% of those in early intervention were placed in special education by age 15, compared with 48% in the control group.

■ **Higher reading and math achievement scores**

Early intervention resulted in large increases in reading scores and moderate increases in math scores, effects that were sustained over time.

■ **Higher levels of formal education**

Those in the treatment group were more likely to be in school at 21 years of age: 40% of the intervention group compared with 20% of the control group. Approximately 35% of the young adults in the intervention group either had graduated from or were attending four-year colleges and universities at the time of assessment, compared with 12% of the control group.

■ **Delayed parenthood**

On average, those in the intervention group were 19.1 years old when their first child was born, compared to 17.7 years of age for those in the control group.

■ **Higher rates of post-high school education for teen mothers**

Fifteen years after enrollment in the project, more than 80% of teen mothers who had received early intervention had engaged in post-high school education, compared with 30% of control group participants.

The project had no measurable impact in other areas. For example, it did not affect maternal attachment to children, parental child-rearing attitudes, or the family's home environment.

Only 12% of those in early intervention were placed in special education by age 15, compared with 48% in the control group.

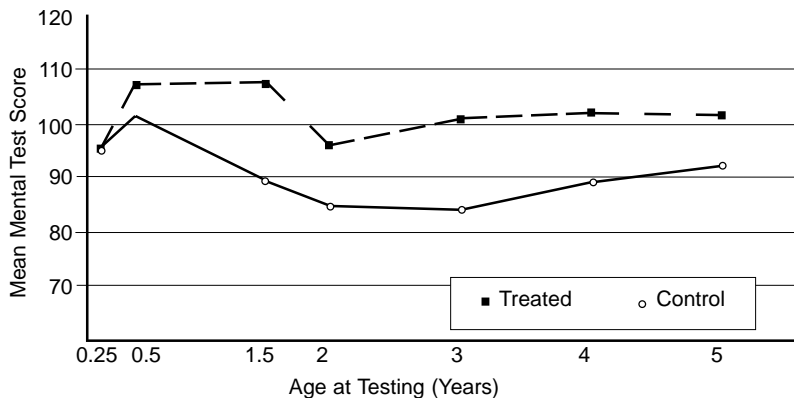


Figure 2. Mean Mental Test Scores for Abecedarian and Control Groups

Which Families Benefited the Most from Early Intervention?

The Abecedarian Project was replicated in the Infant Health Development Project. Researchers found that:

- African-American, Hispanic and Caucasian children who were at highest risk benefited the most from early intervention; and
- Benefits continued when children were in high-resource school environments, but diminished if children moved to low-resource schools.

African-American, Hispanic and Caucasian children who were at highest risk benefited the most from early intervention.

Moreover, a number of research studies have found that the most effective early intervention programs combine high-quality child care with a family approach, particularly one that includes home visiting. For extremely isolated and socially disadvantaged families, home visiting by itself does not appear to be sufficient [53], but in combination with high quality child care, the children in such families can fare better.

How Do the Timing and Duration of the Program Affect Child Outcomes?

In a recent study, Dr. Ramey and colleagues followed up the preschool program with additional educational support, both at home and in school, for the first three years the child attended public school. In this K-2 Program, master teachers with graduate degrees in education and experience working with high-risk families provided consultation and technical assistance to classroom teachers and to parents in order to increase parents' support of learning, to individualize school experiences during the year, and to provide additional support over the summer.

The study found that at age 8, when the program ended, the most effective approach for improving reading achievement was the *combined preschool and K-2* condition, followed by the *preschool only* and the *K-2 alone* conditions, with children in the *control group* scoring lowest. As Figure 3 shows, at age 15, there was a strong significant effect of the *preschool only* condition and the *combined preschool and K-2* conditions. The *K-2 alone* condition, however, had no lasting practical benefit [38]. Thus, it appears that early interventions are important and that the longer the treatment is in effect, the more benefits accrue.

Interventions that begin earliest in a child's life and continue longer tend to produce the greatest benefits. Specifically, programs that begin before age 3 and continue at least until school age have shown the greatest benefits.

What Are the Elements of Successful Early Intervention Programs for Children in Poverty?

The importance of high quality, educational child care from early infancy is now clear. The Abecedarian study provides scientific evidence that early childhood education significantly improves the scholastic success and educational attainment of poor children even into early adulthood. Welfare reform means that, more than ever, children growing up in low-income families will need early child care. Providing early learning experiences with the following elements can increase their chances for later success:

■ Early and sustained intervention

Interventions that begin earliest in a child's life and continue longer tend to produce the greatest benefits. Specifically, programs that begin before age 3 and continue at least until school age have shown the greatest benefits. Some of the largest effects of early intervention were

produced by five major studies, all of which enrolled children in infancy. Educational interventions provided at somewhat older ages also can be beneficial, but the important point is that the younger the child's age, the more likely the benefits will be sizable.

■ **Intense intervention**

Programs that are more intensive—based on the number of home visits per week, the number of hours per day, the number of days per week, and the number of weeks per year—produce larger positive effects than less intensive interventions. In addition, the families and children who participate most actively and regularly are the ones who show the greatest progress. Ramey and colleagues found that the amount of intervention each child and family received had a strong, positive relationship to the child's intellectual and social development at age 3 [37]. The highest participation group had nearly a nine-fold reduction in the percentage of low-birth weight children with mental retardation, compared with a control group that received no home visits or center-based daily education. Another long-term analysis of this same group of families found that children's intellectual development was strongly linked to the amount and length of time they participated in early intervention [4].

Children's intellectual development was strongly linked to the amount and length of time they participated in early intervention.

■ **Direct educational experience**

Children who receive direct educational experience have larger and longer-term benefits than children in programs relying on intermediary routes, such as parent training. Successful direct intervention can take different forms, such as center-based day care with trained staff; home-based program to enhance children's everyday learning opportunities; and programs that combine both components.

Long Term Benefits of the Abecedarian Early Childhood Program

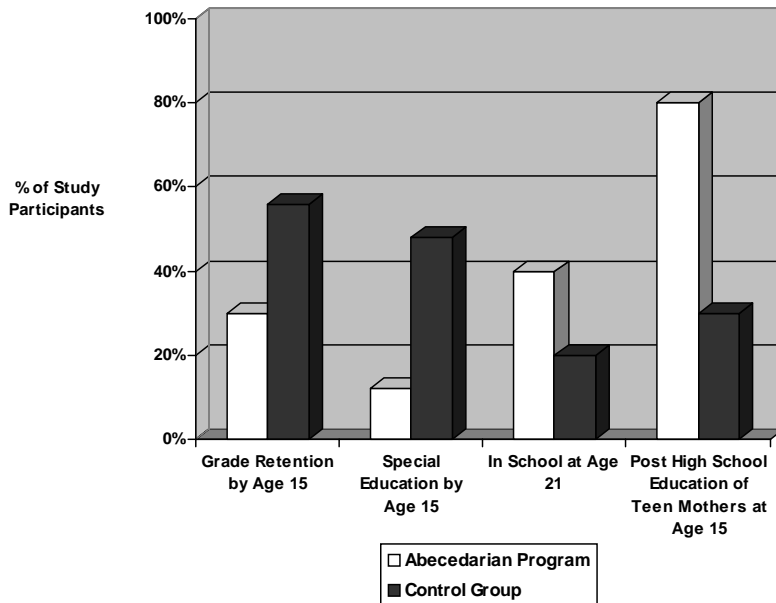


Figure 3. Long Term Benefits of the Abecedarian Early Childhood Program

Over time, the effects of early intervention diminish if no adequate environmental supports are in place to maintain the child's gains and to encourage continued learning.

■ **Comprehensive intervention**

Interventions that provide comprehensive services have larger effects than those that are narrower in focus, such as home visiting only or parent education only. Projects that have had the biggest impacts have adopted a multi-pronged approach including health and social services, transportation, assistance with urgent family needs, individualized developmental therapies, and parent services and training, in addition to strong educational programs for children.

■ **Individualized intervention**

Studies have found that some at-risk individuals show greater gains from early intervention than do others. For instance, children in the Abecedarian Project who had mothers with the most limited intellect (IQ scores below 70) benefited most from the program. Children whose mothers had cognitive disabilities performed at least 20 IQ points higher than control-group participants with similar mothers [26].

■ **Intervention that includes environmental supports**

Over time, the effects of early intervention diminish if no adequate environmental supports are in place to maintain the child's gains and to encourage continued learning. Challenges such as poor school environments, poor health, dysfunctional home life, and poverty affect the behavior of children at all ages. One study found that children who had received continuous environmental supports during all 8 years of life performed best in reading and math, followed by those who had received intervention the first 5 years of those 8 years. The lowest scores were obtained by children who had received intervention only during the first 3 years of elementary school [37].

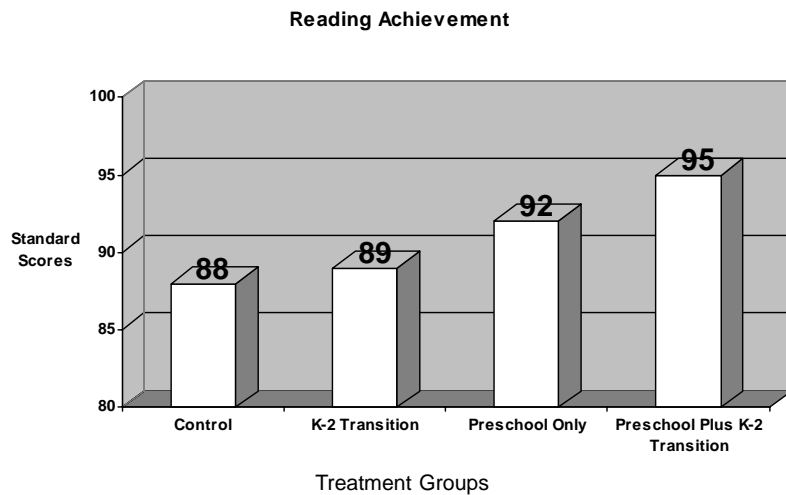


Figure 4. Woodcock-Johnson Age-Referenced Reading Standard Scores at Age 15

Why is Early Childhood Education a Key Investment for State and Local Policymakers?

Comprehensive, intensive, long-term early intervention is not an inexpensive solution to the problems of high-risk children in poverty. It is, however, an effective community investment in both fiscal and human terms.

Figure 4 shows that quality child development and school readiness programs boost academic achievement and social competence for children attending quality elementary and secondary schools. In turn, the increased costs associated with children living in poverty drop significantly, costs such as high school absenteeism, grade retention, special education, school drop-out, juvenile and adult crime, and teen pregnancy. When these social problems decrease, welfare, health care and anti-crime security costs drop as children enter their teen and young adult years. In addition, the parenting skills of these individuals as young adults increase. Ultimately, work force participation increases, and the competitiveness of the local economy rises. Thus, dollars spent on quality early and sustained intervention result in savings down the road (Figure 5).

Craig Ramey, Ph.D.
 Professor and Director
 Civitan International Research
 Center
 University of Alabama at
 Birmingham
 1719 6th Avenue South
 Suite 137
 Birmingham, AL 35294-0021
 (205) 934-8900
 cramey@uab.edu
<http://www.circ.uab.edu>

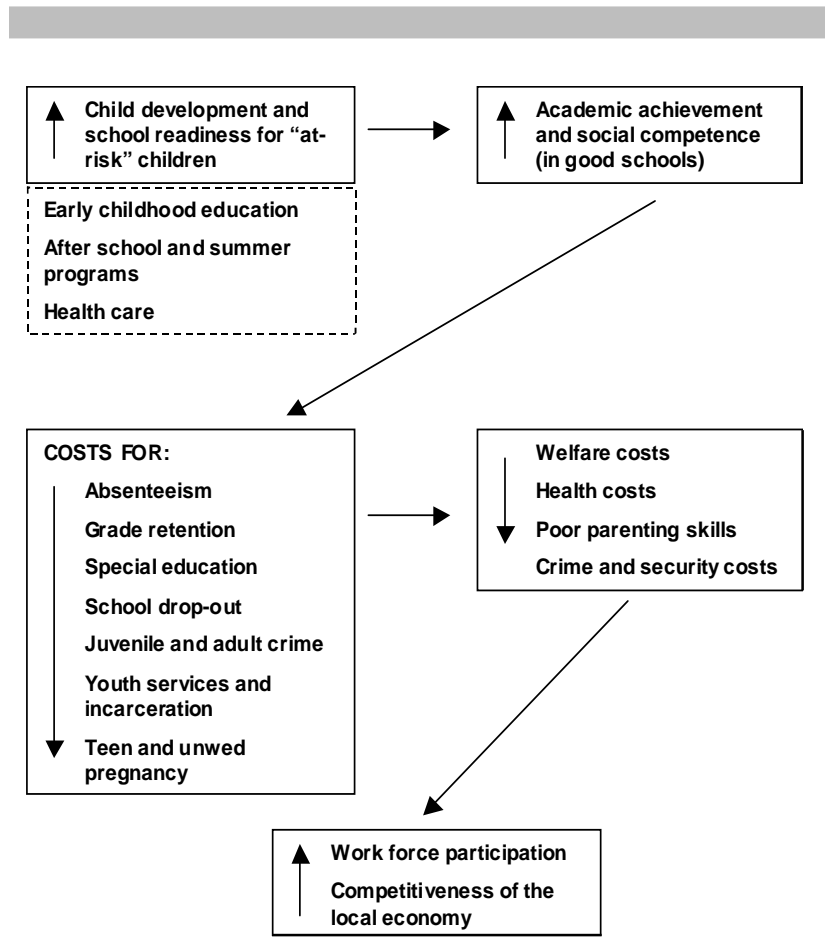


Figure 5. Why Early Childhood Education is a Key Investment for States and Communities

Dr. Kathleen McCartney is Professor of Psychology and Family Studies at the University of New Hampshire, where she also serves as Director of the Child Study and Development Center, a laboratory school for 138 infants, toddlers, and preschoolers. Dr. McCartney received her Ph.D. from Yale University in 1982 and was an assistant professor of psychology at Harvard University for five years before joining the faculty at UNH. She is widely published on the topics of child care, after-school care, and parenting, and is one of the principal investigators of the nationally renowned National Institute of Child Health and Human Development (NICHD) Early Child Care Study, the most comprehensive study of early child care ever undertaken in the United States.



What Do We Know About the Effects of Early Child Care?

Kathleen McCartney

Infants and young children in the United States today spend much of their early lives in child care, in arrangements that vary widely in type, setting, and quality. What are the effects of these child care arrangements? The NICHD Study of Early Child Care, the most comprehensive child care study conducted to date, was designed to address that complex question. More than 1,300 children were enrolled in the study in 1991 and their progress documented for a seven-year period. The major findings of the study to date include the fact that most child care programs (for children at 24 and 36 months) do not meet the recommended guidelines for aspects of care that can be regulated. In addition: (1) the number of hours children spend in child care varies by ethnicity, with white non-Hispanics averaging the fewest hours of care and black non-Hispanics the most; (2) higher quality child care is associated with more positive outcomes whereas lower quality child care is associated with more negative outcomes; (3) infants from poor families are more likely to receive relatively low quality care; (4) children from families at the lowest and highest income levels received higher quality of care than those in the middle income range; (5) families more dependent on a mother's income placed their infants in child care at an earlier age and used more hours of care than families less dependent on a mother's income; and (6) family and home characteristics are stronger predictors of many outcomes than are children's experiences in child care. In addition to describing the NICHD Study of Early Child Care and its findings, this article outlines the characteristics of high quality early child care and explains why quality of care is such an important consideration.

Families are relying in unprecedented numbers on non-maternal care for their infants and children.

The Problem

As increasing numbers of women enter and remain in the work force after pregnancy, including more who are single parents, families are relying in unprecedented numbers on non-maternal care for their infants and children. Consider these facts:

The NICHD Study of Early Child Care (NICHD Study) is the most comprehensive child care study conducted to date to determine how variations in child care are related to children's development.

- In 1975, 39% of mothers with children under six years of age worked outside the home.
- Today, 62% of mothers with young children work outside the home.
- Most mothers return to work in their child's first 3-5 months of life.

Thus, infants and young children today spend much of their early lives in child care, in arrangements that vary widely in type, setting, and quality.

What are the effects of these various child care arrangements? Some child care experts have argued that child care poses risks for infants because healthy development requires caregiving by a single person. In contrast, other experts have said that children may thrive in child care, especially care of high quality. Still other experts contend that child care arrangements do not affect development, unless the care is of very poor quality. Who is right? Answers to these fundamental questions require careful, long-term study of children who, as a group, experience a variety of child care arrangements beginning in infancy.

What Is the NICHD Study of Early Child Care?

The NICHD Study of Early Child Care (NICHD Study) is the most comprehensive child care study conducted to date to determine how variations in child care are related to children's development. Researchers enrolled more than 1,300 children in the Study in 1991 and have followed most of them through the first seven years of their lives. The child care settings children were placed in were selected by their families, based on the availability and affordability of child care in their communities. Children were *not* randomly assigned to different types, amounts, or quality of care [31].

As Figure 1 shows, the children in the NICHD Study are ethnically representative of the U.S. population as a whole. In addition to ensuring that the families reflected racial diversity, the research team included mothers and their partners with a wide variety of educational attainment. At the time of enrollment in the Study, about 10% of the mothers had less than a 12th grade education, slightly over 20% of the mothers had a high school diploma, one-third had some college, 20% had a college degree, and 15% had a graduate or professional degree (compared with 24%, 30%, 27%, 12%, and 6%, respectively, in the U.S. population). Families in the study had a mean income of \$37,781, as compared to a mean income of \$36,875 for families in the U.S. Approximately 20% of the study participants were receiving public assistance at the time of enrollment [31].

The NICHD Study assesses children's development using multiple methods:

- Trained observers
- Interviews
- Questionnaires
- Videotaped interactions
- Developmental assessment tests

Figure 1. Ethnicity of Children Enrolled

What Questions Is the NICHD Study of Early Child Care Designed to Answer?

The goal of the study is to investigate the complex relationships between child care characteristics and children’s developmental outcomes. A major way this study contributes to understanding these relationships is by moving beyond the global question of whether child care is good or bad for children. Instead, the study focuses on how the different aspects of care—such as quantity and quality—are related to various aspects of children’s development [31]. Figure 2 provides a list of the characteristics and outcomes under investigation.

Figure 3 lists the questions the NICHD Study is designed to answer.

Most infants in the NICHD Study were placed in non-maternal care prior to 4 months of age.

What Are the Major Findings from the NICHD Study of Early Child Care?

The number of hours spent in child care varies by ethnicity

Most infants in the NICHD Study were placed in non-maternal care prior to 4 months of age. On average, each child in care received 33 hours of care per week during the first year, but time spent in care varied with ethnicity of the child and the family. White non-Hispanics averaged the fewest hours of care, whereas black non-Hispanics averaged the most; other ethnic groups fell between these two points [31].

Child Care Characteristics	Family Characteristics	Child Outcomes
Age of entry into care	Economic situation	Intellectual development
Quantity of care	Structure (single parent vs. partnered parent)	Language development
Stability of care	Maternal vocabulary	Social development
Quality of care	Mother’s education	Emotional development
Type of care	Mother’s psychological adjustment	Behavioral adjustment
Provider’s education	Mother’s child rearing attitudes	Physical health
Provider’s training	Quality of mother-child interaction	
Adult-to-child ratio	Home environment	
Group size		
Safety and health issues		

Figure 2. Child Care Characteristics, Family Characteristics, and Child Development Outcomes Studied

Infants from poor and near-poor families were more likely to receive relatively low quality care.

The type of child care selected varies by age of child

Parents placed their children in a wide variety of child care settings, including care provided by fathers or other relatives, by in-home caregivers, by child care home providers, and by center-based staff. As Figure 4 shows, nearly half the infants were cared for by a relative (father/partner or grandparent) when they first entered non-maternal care. However, as Figure 5 illustrates, there was a discernible shift toward

Questions the NICHD Study is Designed to Answer

- Which **family characteristics** influence how early children are placed in care, how many hours they spend in care, how many care arrangements they are experiencing over time, and the quality of care they receive?
- What is the relation between the aspects of child care that are **possible to regulate** and the quality of care children receive in child care?
- Is the **family influence** on children's development diminished when children are in extensive child care – as compared to being cared for exclusively by their mothers?
- Is the average **number of hours** that children spend in child care associated with their psychological development or their physical health?
- Is the **quality** of the child care experience associated with the psychological or health development of children?
- Are **past experiences in child care** predictive of later psychological or health outcomes?
- Are the **age of entry** into care, the **number of care arrangements**, and **type of care** associated with children's psychological development or their physical health?
- Is the relationship between child care and children's development different for **disadvantaged** and/or for **minority** children?
- Are there certain **time periods** in children's lives in which child care experiences are more important for their psychological or health development?

Figure 3. Questions the NICHD Study is Designed to Answer

*Poverty was defined using the income-to-needs ratio, a standard measure of a family's economic situation (U.S. Department of Commerce). Poverty level is computed by dividing the family income (exclusive of federal aid) by the federal poverty threshold for that family. In 1991, the federal poverty line for a family of four was \$13,924. Of the families in the NICHD Study, 16.7% lived in **poverty** (i.e., income-to-needs ratio < 1.0), and 18.4% lived **near-poverty** (i.e., income-to-needs ratio = 1.00-1.99).

reliance on child care centers and family child care homes as children matured [35].

Poverty predicts the child care experience

Nearly 35% of the families and children included in the study were living in poverty or near-poverty.* Infants from poor and near-poor families were more likely to receive relatively low quality care [31]. Specifically:

- Families who moved in and out of poverty—known as transitory poverty—were most likely to place their infants in child care very early (before 3 months of age)
- Infants from families who were consistently poor and who had been receiving public assistance for at least a 15-month period were less likely to enter care early or to be in non-maternal care arrangements at 15 months of age
- Children who were not in care by 15 months of age had mothers with the lowest level of education and were from the largest families
- In general, children from families in poverty who were cared for in home settings (by a child care home provider or family member) received relatively low-quality care
- Children in near-poverty received lower quality of center care than children in poverty, presumably because those in near-poverty do not qualify for the subsidized care that those in poverty do.

Children in near-poverty received lower quality of center care than children in poverty, presumably because those in near-poverty do not qualify for the subsidized care that those in poverty do.

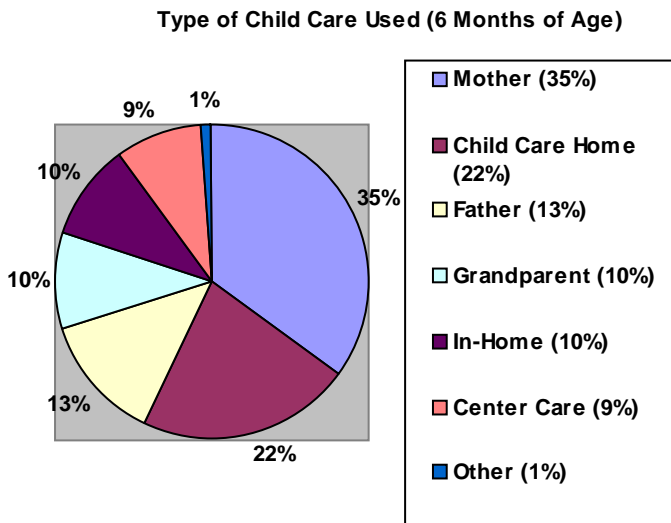


Figure 4. Type of Child Care Used by Parents when Infants were 6 Months Old



Demographics and family characteristics predict the type of care selected

The research team examined three sets of variables to determine their relation to the age of entry into care and to the type, quantity, and quality of care selected: (1) demographic characteristics (e.g., ethnicity, maternal education, and family structure), (2) economic characteristics (e.g., maternal and non-maternal income), and (3) family quality characteristics (e.g., maternal attitudes and beliefs and the quality of the home environment).

The researchers found that:

- Families more dependent on a mother's income placed their infants in child care at an earlier age, and used more hours of care than families less dependent on a mother's income
- Employed mothers who earned the highest incomes were most likely to place their infants in early care at 3-5 months, and were most likely to use in-home care for the first 15 months
- Children from families at the lowest and highest income levels received higher quality of care than those in the middle income range.

Lower quality child care predicted more negative outcomes.

Higher quality child care is associated with more positive outcomes

Researchers found that some child care characteristics do contribute to children's development, although the effects generally were modest in size. Small to moderate gains were noted in the following areas when children participated in higher quality child care:

- Better mother-child relationships
- Lower probability of insecure attachment in infants of mothers who were low in sensitivity

Type of Child Care Used (36 Months of Age)

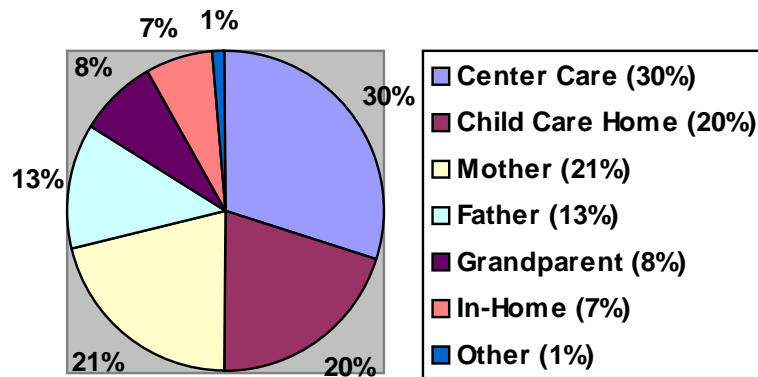


Figure 5. Type of Child Care Used (36 Months of Age)

- Fewer reports of problem behaviors
- Higher cognitive performance
- Higher language skill
- Higher levels of school readiness.

Lower quality child care is associated with more negative outcomes

Conversely, lower quality child care predicted more negative outcomes:

- Less harmonious mother-child relationships
- A higher probability of insecure mother-child attachment for children whose mothers were low in sensitivity to children
- More problem behaviors
- Lower cognitive performance
- Lower language skill
- Lower school readiness scores.

Family and home characteristics are stronger predictors of many outcomes than are children's experiences in child care

Family and home characteristics include such factors as income, maternal education, family structure, maternal separation anxiety, and maternal depression [27]. Researchers found that a combination of these factors served as better predictors of outcomes than did children's experiences in child care. For example, family and home characteristics were stronger indicators of the quality of mother-child interaction and of children's behavior [33].

Still, it is important to note that the quality and quantity of child care were not inconsequential factors. For example, although family and home characteristics were stronger predictors of outcome in the areas described below, researchers nonetheless found that:

- Low-income mothers using full-time higher quality care had higher positive involvement at 6 months than did low-income mothers not using care or than those using lower-quality full-time care.
- Children who spent more time in group arrangements with more than three other children had fewer behavior problems (as reported by the caregiver) and were observed to be more cooperative in child care.
- The higher the quality of child care (more positive language stimulation and interaction between the child and provider), the greater the child's language abilities at 15, 24, and 36 months, the better the child's cognitive development at age two, and the more school readiness the child showed at age three.
- Exclusive care by mother provided no benefit in terms of the cognitive development of the child. Higher quality child care provided an advantage, whereas lower quality child care was disadvantageous, in comparison to exclusive maternal care [31].

The higher the quality of child care, the greater the child's language abilities at 15, 24, and 36 months, the better the child's cognitive development at age two, and the more school readiness the child showed at age three.

Most child care programs do not meet the recommended guidelines for aspects of care that can be regulated.

Most child care programs do not meet the recommended guidelines for aspects of care that can be regulated

The NICHD Study investigated four aspects of child care that could be regulated: (1) child-to-staff ratio (2) group size, (3) teacher training, and (4) teacher education. The research team found that most child care programs (for children ages 24 and 36 months) did not meet all four recommended guidelines [34]. Importantly, children in centers that met more guidelines had better language comprehension and school readiness at 36 months of age. They also had fewer behavior problems at 24 and 36 months of age [33].

What Are the Characteristics of High Quality Early Child Care?

The research team studied the different child care settings to determine those characteristics that contributed to positive caregiving and high quality care. Positive caregiving was measured by observing and documenting the frequency of interaction, and then rating the quality of the interaction between caregivers and children in care. The child care settings also were measured both in terms of (1) characteristics that could be regulated or that were governed by guidelines (e.g., group size, child-to-adult ratio, and physical environment) and (2) caregiver's characteristics (e.g., formal education, specialized training, child care experience, and beliefs about childrearing).

The research team found that the following characteristics are associated with high quality care and positive caregiving:

- Safe, clean environments
- Cognitively stimulating environments and programming
- Smaller group sizes
- Lower child-to-adult ratios
- More sensitive, responsive caregivers
- Caregivers who allowed children to express their feelings and took their views into account.

Quality of care is the most consistent child care predictor of child development outcomes.

Why is Quality of Care So Important?

The NICHD Study of Early Child Care is producing a wealth of information on the effects of early child care on children's development. Overall, what the study has found so far is that, in the area of social and emotional development during the first three years of life, what transpires in the family appears to be more important in explaining children's development than whether children are cared for by someone other than their mothers on a routine basis [35]—or than the quality, quantity, stability, and type of care, or the age of entry into such care. Still, in the area of social and emotional development, the research suggests that child care characteristics do exert some influence on outcome. Of the child care measures, **quality of care was found to be the most consistent predictor of outcomes**, with higher quality of care relating to greater social competence and cooperation and less problem behavior at both two and three years of age [33].

In the areas of children's cognitive and language development as well, the quality of child care over the first three years of life was found to be

consistently, albeit modestly, associated with children's development. The higher the quality of child care (more positive language stimulation and interaction between the child and provider), the greater the child's language abilities, the better the child's cognitive development, and the more school readiness the child demonstrated during the preschool years.

Most young children in the U.S. today participate in child care. The NICHD Study of Early Child Care is demonstrating that **quality of care is the most consistent child care predictor of child development outcomes** [31].

- Higher quality care is associated with more positive social, emotional, cognitive, language, and behavioral outcomes.
- Lower quality care is associated with more negative outcomes.

For these reasons, it is important for policymakers to support the establishment and successful operation of high quality early child care programs.

Kathleen McCartney, Ph.D.
Department of Psychology
University of New Hampshire
Conant Hall
Durham, NH 03824-3567
(603) 862-3168 (phone)
(603) 862-4986 (fax)
kathleen.mccartney@unh.edu

Dr. Mary Larner is a Policy Analyst and Editor with the David and Lucile Packard Foundation's Children, Families, and Communities Program. She develops and edits issues of the journal, *The Future of Children*, which focuses on diverse topics related to the well-being of children. The December 1999 issue, "When School Is Out," includes articles by leading researchers in the field of school-age child care and youth development summarizing current knowledge about after-school programs for children ages 6 to 14. Previously, Dr. Larner studied child care use by low-income families at the National Center for Children in Poverty in the Columbia University of Public Health. She also examined home visiting programs and the long-term impacts of preschool programs at the High/Scope Educational Research Foundation. She has authored several reports, book chapters, and articles on child care and family support topics.



Why Should We Care About After-School Care?

Mary Larner

The United States is experiencing an increasing need for out-of-school care for children. While all children need safe out-of-school options, the demand is especially great for younger children (ages 5 to 9) and children living in low-income neighborhoods. Children, families, and communities all stand to benefit when children attend high-quality programs after school. Demonstrated benefits include higher grades in school and improved work habits and social skills. Advocates argue that reduced rates of crime and risky activities such as drug or alcohol use and sexual contact may also result. Currently, however, four major barriers hamper delivery of after-school services to children: (1) inadequate funding, (2) under-qualified and high-turnover staff, (3) inadequate and/or inappropriate space, and (4) lack of long-term evaluations of program impact. Recent polls show that most voters believe that organized activities for children and teens should be provided after school, and that most voters are willing to pay more in taxes to increase the availability of such programs.

The Problem

With nearly 40 million children between the ages of 5 and 14, the United States is experiencing a burgeoning need for out-of-school care (i.e., before school hours, after school hours, summer, and school holidays). Widespread shifts in family and community life have changed the lives of school-age children. Because more parents are working, fewer familiar adults are home or nearby when children are dismissed from school. Consider these facts:

- More than 75% of mothers with school-age children are employed, and two-thirds of them work full time [7].
- Public schools meet for only 6 hours per day, 180 days per year. The gap between parents' and children's schedules may amount to perhaps 1,000 hours per year, time when children may engage in leisure and non-school activities—or may court trouble.

The gap between parents' and children's schedules may amount to perhaps 1,000 hours per year.

During the afternoon hours, rates of juvenile crime triple . . . 47% of violent juvenile crimes take place on weekdays between the hours of 2:00 p.m. and 8:00 p.m.

- An estimated 35% of 12-year-olds care for themselves regularly during after-school hours while parents are working [51].
- During the afternoon hours, rates of juvenile crime triple, and many unsupervised youngsters experiment with tobacco, alcohol, drugs, and sex. Police statistics indicate that both these risky behaviors and juvenile crime increase significantly from 3:00 p.m. to 6:00 p.m. Widely reported FBI statistics indicate that 47% of violent juvenile crimes take place on weekdays between the hours of 2:00 p.m. and 8:00 p.m. [25].
- The U.S. General Accounting Office estimates that by 2002 the supply of school-age programming will meet barely one-quarter of the need in many urban areas.
- The cost of providing after-school care runs between \$2,000 and \$4,000 per child per 12-month year. Current revenues (parent fees, public and private funding, and in-kind contributions) typically cover only two-thirds of program costs [13], and many low-income parents cannot afford to pay their portion of the costs.

The habits and expectations that surround out-of-school time today were shaped by patterns of family life that existed in earlier eras. The school day and school year were planned around the needs of farming families, but now schools release children to empty houses and neighborhoods. After-school activities that grew in popularity during the prosperous, family-oriented 1950s and 1960s (such as Scouts, religious classes, and Little League) now find that few parents are available to serve as volunteer leaders or to provide transportation. New programs and policies that reflect current social conditions are needed.

What is the Nature of After-School Care?

During the school years, children acquire and consolidate basic academic and social skills, dispositions toward achievement, expectations for behavior, and goals for the future. After-school programs can play a vital role in this process. They can support and supplement families and schools in nurturing children's well-rounded development.

Programs typically focus on one or more of the following goals:

- Providing safe, supervised care for children
- Preventing gang and drug involvement and other types of delinquent behavior
- Improving academic achievement
- Offering recreational opportunities.

Currently, after-school care is a highly diverse network of programs that vary dramatically in focus, sponsorship, structure, activities, intensity, and frequency of operation. Programs range from full-time year-round child care to drop-in centers and after-school clubs. Therefore, the omnibus term "after-school program" may mean anything from an extended-day program at school, to a dance group, to a YMCA basketball league. Such imprecision confuses efforts to document supply and demand, to plan new initiatives, to target program improvement efforts, and to create appropriate expectations for program impact.

One reason for the variability in after-school programs is that constituent groups have different views of the meaning of out-of-school time:

- For **children**, time out of school means freedom to be with friends, to explore their surroundings, to pursue their own interests, and to retreat with their private thoughts. As they grow older, children want both "voice and choice" in places where they can gather and interact with

After-school programs can support and supplement families and schools in nurturing children's well-rounded development.

adults on a relatively equal footing, and make choices about what they will do and how they will do it.

- For **parents**, out-of-school time is a source of anxiety, concern, and expense. One single mother who has to leave her 8-year-old home alone while she works commented, “All I do after 3:00 is worry” (quoted in [3]). Parents who are trying to protect and encourage their children by “remote control” as they work outside the home seek safe, supervised, goal-directed programs.
- The **public** wants a safe environment that discourages risky behaviors and criminal activities and that facilitates the development of young people. Voters and policymakers see the value in programs that prevent problem behaviors, promote learning, and provide guidance to young people.

Thus, communities need an array of diverse programs and services that are carefully planned and adequately funded. They also need to make informed decisions regarding the purpose of and rationales for selecting a particular program focus (e.g., sports and recreation versus “down time” with peers versus academic enhancement).

For parents, out-of-school time is a source of anxiety, concern, and expense (“All I do after 3:00 is worry”).

What Benefits Can We Expect from After-School Care?

Some studies have found that, when compared with children who do not participate in after-school programs, the youngsters who do participate achieve higher grades in school, exhibit more positive work habits in school, engage in fewer high-risk behaviors, and show more social competence with peers at school and at home [51]. These results must be interpreted with some caution, however, because the programs studied are voluntary and their participants are self-selected.

Still, it is clear that some children gain more than others. Research suggests that the greatest benefits occur for younger children (ages 5 to 9), and those in low-income neighborhoods [25]. Children in these groups show improvements in behavior with peers and adults, work habits, and performance in school [52].

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Who Uses After-School Care?

The National Child Care Survey (1990) on child care arrangements reported that the percentage of children enrolled in after-school care decreased steadily with age (Figure 1), from 22% in kindergarten, to 14% in third grade, to 6% in fifth grade, to 1% in seventh grade [17].

Dramatic differences separate the choices available to children, depending on where they live. For example:

- Nearly one-half the schools in suburban areas and in central cities offer extended-day programs to fourth graders, whereas only one-fourth of rural schools do so [50].
- The low-income neighborhoods where children are most in need of safe, interesting, challenging activities offer few after-school options, and the programs that do exist tend to address risks and problems rather than cultivating children’s skills and talents [7].

The utilization of programs is affected by cost and ease of access, as well as need and interest. The 1991 *National Study of Before- and After-School Programs* [44] found that 41% of the spaces that existed in licensed programs were unfilled. One study of low-income families with children ages 5 to 7 asked parents about barriers that kept them from using their preferred after-school options. Nearly half (43%) of the parents cited cost,

and 16% cited transportation problems [30]. As a result, long waiting lists at free programs exist alongside empty spaces in programs that charge fees.

What Are the Elements of Successful After School Programs for Children?

As with early child care, research findings indicate that staff-child ratios, level of staff training, the nature of staff-child interactions, and the diversity and flexibility of program activities all are related to children's adjustment and satisfaction with programs. Children respond more positively to programs when:

- Staff-child ratios are smaller
- Staff have more formal training
- Programs are more flexible
- Activities are developmentally appropriate.

Children do not fare well in rigidly structured programs where staff members have a harsh style of interacting, but benefit from attending flexible programs with varied activities and supportive staff [40].

There is no agreed-upon credential for work with school-age children. Moreover, appropriate training is scarce, staff salaries average less than \$10 per hour, and staff turnover exceeds 40% per year.

What are the Barriers to Program Success?

The 1999 volume of *The Future of Children*, "When School is Out" [25] reported four major hurdles that impede successful delivery of after-school programs:

1. **Finding ongoing operating funds.** Government and foundation grants are a key source of start-up funding and project support, but little public funding is available for operations over the long term.

% of Children in After-School Care by Grade

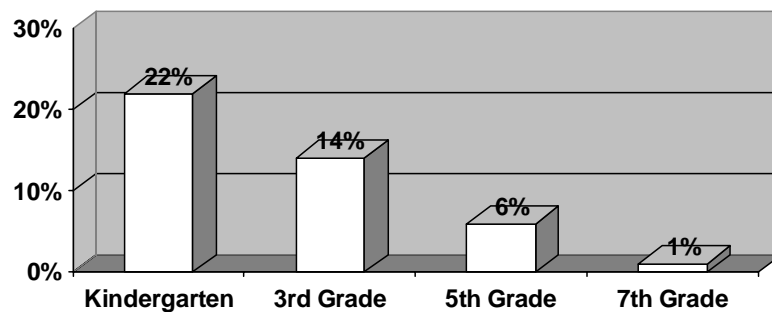


Figure 1. Percentage of Children Enrolled in After-School Care by Grade Level

2. **Maintaining qualified staff.** There is no agreed-upon credential for work with school-age children. Moreover, appropriate training is scarce, staff salaries average less than \$10 per hour, and staff turnover exceeds 40% per year.
3. **Securing appropriate space.** Many programs operate in shared spaces that they do not control. They often lack access to libraries, computer labs, art rooms, and playgrounds.
4. **Developing an accurate understanding of program potential.** Strong, long-term evaluations of after-school and youth development programs are scarce [25].

In general, programs are less likely to succeed when:

- Program focus is unclear
- A developmental perspective is absent from programming and activities
- Staff are poorly trained and supported
- Planning time and curricular supports are lacking or uneven
- Children's attendance is irregular
- Funding is inadequate.

While an infusion of new funds would resolve some difficulties, problems of staffing, space, and supporting institutions will remain. There is no cadre of trained youth professionals ready to take up positions in new after-school programs, nor do most communities have facilities designed for children that are currently available for use. Long-term investments are needed to improve individual programs and to establish an infrastructure of facilities and training supports to uphold the quality of after-school programs in future years. The time is now ripe to think strategically and begin making those investments in programs, infrastructure and evaluation.

Why is After-School Care a Key Investment for State and Local Policymakers?

A consensus now is emerging that the wider society should share with parents the responsibility for providing programs and activities, safe places, and transportation options to make out-of-school time productive for children and teens. A poll of 2,000 adults taken in 1997 found that the majority held negative views of American children, but 60% of those polled endorsed the idea that more after-school programs would provide an effective way of addressing the problems of "kids these days" [51]. After-school programs increasingly are seen as relevant to two broad policy agendas: (1) preventing crime, substance abuse, and teen pregnancy, and (2) promoting school achievement.

Recent polls show that most voters believe there should be organized activities for children and teens after school, and they are willing to pay more in taxes to increase the availability of after-school programs. For instance, 72% of the parents in a national poll taken in 1996 commented that they would like schools to be kept open longer for classes, supervised homework, or extracurricular activities [16]. Two 1998 surveys, one of more than 1,000 California adults [47] and one of a national sample of 800 voters [48], found that nearly 80% of those surveyed said they were willing to pay more taxes to support after-school mentoring, educational, and prevention programs for youths.

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Mary Larner, Ph.D.
Policy Analyst and Editor
Children, Families, and
Communities Program
The David and Lucile Packard
Foundation
300 Second Street, Suite 200
Los Altos, CA 94022
Phone: (650) 948-7658
m.larner@packfound.org

State and federal budgets for education, public safety, crime prevention, and child care provide some funding for after-school programs. For example, in 2000, \$450 million in federal grants is available through the Department of Education to enable schools to establish after-school programs called "21st Century Community Learning Centers." The Centers are school-based programs offering varied activities for children and community members after regular school hours in a safe, drug-free, supervised environment.

Funding increases are important, but they constitute only the first step. New and established programs need to be evaluated so that quality problems can be addressed. In addition, we need to cultivate creative means for making high quality after-school programs more affordable and accessible, especially for low-income families.

From a policy perspective, this is a time to concentrate substantial evaluation resources in a few ambitious and careful studies of important programs to gain the knowledge needed to guide subsequent policy and funding decisions. When they measure a broad spectrum of important life outcomes (such as the avoidance of delinquency or early pregnancy, and increases in high school graduation rates and improvements in career and college choices), evaluations can help to sustain and justify public support for the afterschool programs that children need and parents want.

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Additional Resources

Printed Publications

NICHD Early Child Care Research Network

Child outcomes when child care center classes meet recommended standards for quality (1999). *American Journal of Public Health*, 89, pp. 1072-1077.

The effects of infant child care on infant-mother attachment security: Results of the NICHD study of early child care (1997). *Child Development*, 68, pp. 860-879.

Financing Child Care in the United States: An Illustrative Catalog of Current Strategies

A joint publication (1997) by:

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<http://www.circ.uab.edu>

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Making Child Care Better: State Initiatives, 1999

Funding Inclusive Child Care, 1999

Early Childhood Initiatives in States: Translating Research into Policy, 1998

Building Blocks: A Legislators Guide to Child Care Policy, 1997

Early Childhood Care and Education: An Investment that Works (2nd ed.), 1997

The David and Lucile Packard Foundation

<http://www.futureofchildren.org>

When School is Out, 1999

Financing Child Care, 1996

Long-Term Outcomes of Early Childhood Programs, 1995

Policy Analysis for California Education

<http://pace.berkeley.edu>

Remember the children: Mothers balance work and child care under welfare reform, 2000

[Study released by the University of California at Berkeley and Yale University, based on research in California, Connecticut, and Florida.

Authored by Bruce Fuller, Ph.D. (Berkeley) and Sharon Lynn Kagan, Ph.D. (Yale).]

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Marguerite Barratt, Director
Institute for Children, Youth and
Families
Suite 27, Kellogg Center
Michigan State University
East Lansing, Michigan 48824-
1022
(517) 353-6617
mbarratt@pilot.msu.edu

Eileen Trzcinski, Associate
Professor
School of Social Work and College
of Urban, Labor and Metropolitan
Affairs
Wayne State University
Detroit, MI 48202
(313) 577-4422
e.trzcinski@wayne.edu