Child Care

ISSUE BRIEF:

THE HIGH COST OF CHILD CARE PUTS QUALITY CARE OUT OF REACH FOR MANY FAMILIES

Karen Schulman
Gina Adams

Children's Defense Fund
December 1998

About the Children's Defense Fund

The mission of the Children's Defense Fund is to *Leave No Child Behind* ® and to ensure every child a *Healthy Start*, a *Head Start*, a *Fair Start*, a *Safe Start*, and a *Moral Start* in life and successful passage to adulthood with the help of caring families and communities.

CDF provides a strong, effective voice for *all* the children of America who cannot vote, lobby, or speak for themselves. We pay particular attention to the needs of poor and minority children and those with disabilities. CDF educates the nation about the needs of children and encourages preventive investment before they get sick or into trouble, drop out of school, or suffer family breakdown.

CDF began in 1973 and is a private, nonprofit organization supported by foundations, corporation grants and individual donations. We have never taken government funds.

CDF works to improve practices and policies that affect large numbers of children rather than helping families on a case-by-case basis. Our staff includes specialists in health, child welfare, mental health, child development, family income, and youth violence. CDF gathers data and disseminates information on key issues affecting children. We assess how private and public sector policies, priorities, and practices impact the health and safety of children and the ability of parents to support and nurture their children, and work to increase positive supports for children and their families.

CDF educates hundreds of thousands of citizens annually about children's needs and responsible options for meeting those needs. We provide information, technical assistance, and support to networks of state and local child advocates, service providers, and public and private sector officials and leaders.

CDF is a national organization with roots and branches in all 50 states and communities across America. Although our main office is in Washington, D.C., we reach out to towns and cities across the country to monitor the effects of changes in national, state, and local policies and to help people and organizations concerned with what happens to children. CDF maintains state offices in California, Minnesota, New York, and Ohio, a Southern regional office of the Black Community Crusade for Children in Jackson, Mississippi, and local project offices in Marlboro County, S.C., and Columbus and Greater Cincinnati, Ohio. CDF has developed cooperative projects with groups in many states. CDF's former Alex Haley Farm in Clinton, Tennessee serves as a school and spiritual renewal center for building movement to *Leave No Child Behind* ®. The Black Community Crusade for Children, developed by Black leaders and coordinated by CDF, is an initiative to mobilize the African American community behind a targeted effort to address the special problems facing *every* child and family.

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Acknowledgments

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Highlights

Every day, millions of American parents rely on child care to enable them to work and to provide the early education experiences needed to prepare their children for school. Yet, as essential as quality child care is to parents' ability to work and children's healthy development, it is out of the reach for many families because of its high cost. A recent survey of child care costs across the country by the Children's Defense Fund (CDF) found:

- Child care for a 4-year-old in a child care center averages $4,000 to $6,000 a year in cities and states around the country. Some centers charge $10,000 or more a year. Families with younger children or more than one child in care face even greater costs.

- The average annual cost of child care for a 4-year-old in an urban area center is more than the average annual cost of public college tuition in almost every state. In some cities child care costs *twice* as much as college tuition.

- The high cost of child care is difficult for parents to escape. Child care is expensive for families whether they choose to use center care or family child care, whether they live in urban or rural areas, or whether they have infants, preschoolers, or school-age children.

- Low-income families are left with the fewest choices. They can't afford not to work, yet even average-priced child care is unaffordable. A two-parent family with both parents working full time at minimum wage ($21,400 a year before taxes) and needing child care for their two children might reasonably be expected to spend 10 percent of their income — $2,140 a year — on child care. Yet, budgeting this amount for child care would leave the family several thousand dollars short of that needed to afford even *average-priced* child care, much less the higher prices charged by many better quality centers and family child care homes.

- Many low-income families have no choice but to place their children in lower cost, often lower quality, care. As a result, too many children are cared for in unstimulating or even unsafe settings, depriving them of the opportunity to learn, grow, and thrive. While this is an unacceptable situation under any circumstance, it is particularly alarming given that children from low-income families are at greatest risk for school failure and are most in need of the strong start that high-quality care can provide.

- The dilemma posed for families by high child care costs *cannot* be resolved by asking child care providers to lower their prices. Child care providers operate on extremely tight budgets. A large proportion of a child care program's budget is devoted to staff salaries, which are already unacceptably low. The average salary of a child care worker is under $12,000 a year. Lowering prices would only undermine a child care program's ability to hire a sufficient number of well-trained teachers, purchase adequate materials and equipment, and afford a safe facility.

Neither parents nor child care providers can solve the challenge of high child care costs on their own. Currently, state and federal funds are so insufficient that only one out of 10 children from low-income families who are eligible under federal law and who need assistance are able to receive it. The federal government, states, local communities, and the private sector must all play a larger role in helping families afford quality child care. This will enable parents to get and keep the jobs they need to support their families and ensure that children get the strong start they need to succeed in school and in life.

About This Issue Brief

The data in this report were collected from local child care resource and referral agencies (CCR&Rs) through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies (NACCRRA). At least one local CCR&R in each state was contacted and asked to provide any available data on child care costs in an urban area, a rural area and/or statewide.

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Child Care Is a Fact of Life

Child care is a fact of life for millions of parents working to support their families. Today, only 23 percent of all families with children younger than age 6 have one parent working and one at home. The vast majority of families must rely on child care to help care for their children while the parents go to work.

For many families, having one parent stay home with their children is not a viable alternative. Single parents must work to provide for their families, and two-parent families often need two incomes just to make ends meet. Nationally, the majority (55 percent) of working women provide half or more of their household income,[1] and one out of three children of working mothers are poor even though their mothers work or *would be* poor if their mothers did not work.[2] To these parents, their jobs — and the child care that enables them to keep their jobs — are the difference between climbing out of poverty and falling deeper into it.

Parents rely on child care not only to enable them to work but also to provide the early education experiences that help prepare their children for school. Most children will be enrolled in a center-based program at some point before they enter kindergarten — for example, 65 percent of 4-year-olds and 75 percent of 5-year-olds not yet in kindergarten are cared for in centers on a regular basis.[3]

Child Care Is a Major Financial Burden, Exceeding the Cost of College

A survey of child care costs in the 50 states reveals that child care is one of the biggest expenses families face in raising their children. Child care can easily cost an average of $4,000 to $6,000 a year, and may cost as much as $10,000. Families with infants in care must grapple with particularly high costs. Among the cities surveyed, the average price of center care for infants is generally about $1,000 more than the average price of center care for 4-year-olds. These are only costs for one child's care — yet, many families face child care expenses for more than one child.

Given the high cost of child care, parents can easily spend more in a year on child care than they would on annual public college tuition. The average annual cost of child care for a 4-year-old in an urban area center is more than the average annual cost of public college tuition in *all but one state* (Appendix, Table A-1). The average cost of child care for *infants* in an urban area center is more than the average cost of public college tuition in *every* state.[4]

In a number of states, the average cost of child care not only exceeds the cost of public college tuition but exceeds it by a significant amount. The average cost of center care for a 4-year-old in an urban area is at least *twice* as much as the cost of public college tuition in almost one-third of the states (see Table 1 below).

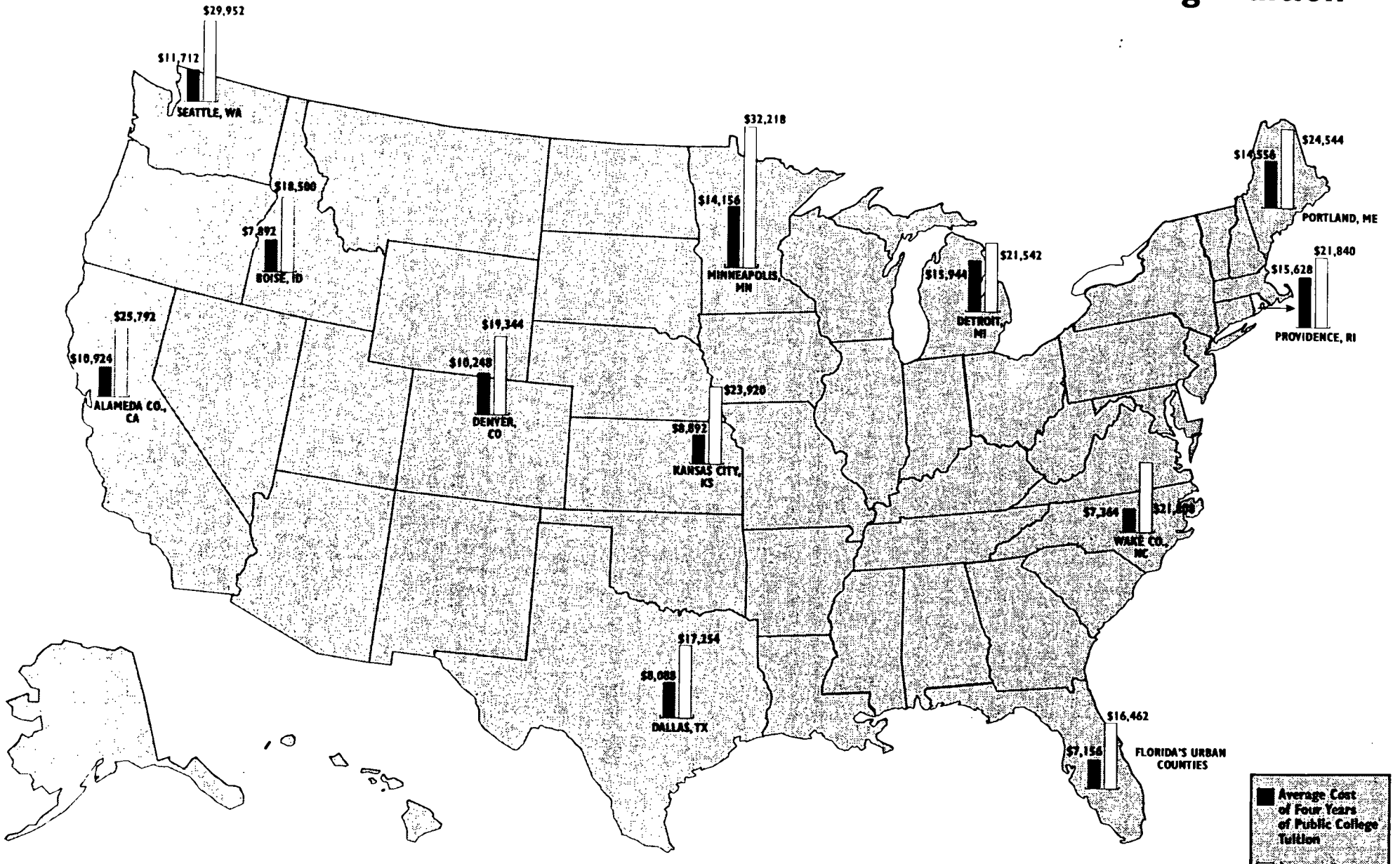
Table 1. States Where the Average Annual Cost of Child Care for a 4-year-old in an Urban Area Center Is Twice the Average Annual Cost of Public College Tuition

Location State	Urban area	Average annual cost of child care for a 4-year-old in a center	Average annual cost of public college tuition
Alaska	Anchorage	$5,784	$2,552
Arizona	Tucson	4,188	2,009
California	Alameda County	6,032	2,731
Florida	Urban counties	3,844	1,789
Georgia	Atlanta	4,992	2,244
Hawaii	Honolulu	6,188	2,298
Idaho	Ada County (Boise)	4,354	1,973
Kansas	Johnson County (Kansas City)	5,200	2,223
Nebraska	Omaha	4,940	2,269
Nevada	Washoe County (Reno)	4,420	1,814
New Mexico	Albuquerque metro area	4,190	2,016
North Carolina	Wake County	5,068	1,841
Oklahoma	Tulsa, Oklahoma, Cleveland, and Canadian counties	4,056	1,936
Washington	Seattle	6,136	2,928
Wisconsin	Dane County	6,240	2,747

See Appendix, Table A-1 for data on child care and public tuition costs in all states and source information.

The enormous burden that child care costs pose for families is even more striking when the total cost of four years of college is compared with the total cost of child care over the four years before a child enters kindergarten. For instance, in St. Louis (where college tuition and child care costs are average relative to the other urban areas surveyed), four years of college tuition costs $12,920, whereas four years of child care at an average-priced center costs $20,280 (see the map on the following page for a comparison of costs in other cities around the country).[5]

Four Years of Child Care Costs More Than Four Years of Public College Tuition



Source: K. Schulman and G. Adams, *The High Cost of Child Care Puts Quality Care Out of Reach for Many Families*, (Washington, DC: Children's Defense Fund, 1998). See text for information about how child care costs were calculated.

As a result, many families across the country find that four years of quality child care is more difficult to afford than four years of college. Without some help paying for care, these families will not be able to provide their children with the positive early care and education experiences that will prepare them for school and enable them to succeed.

The High Cost of Child Care Is Inescapable for Parents Across the Country

The high cost of child care is an inescapable reality for many families, regardless of where they live, what type of care they use, or the age of their children. The average annual cost for a 4-year-old in a child care center exceeds $4,000 in over two-thirds of the 47 cities surveyed and is more than $5,000 in one-third of the cities. For example, in Albuquerque, N.M., the average annual cost of center care for a 4-year-old is $4,200; in Wilmington, Del., the cost is $4,900; and in Minneapolis, the cost is $6,700 (Appendix, Table A-2).

The cost of care for infants is even higher. The average cost of center care for a 12-month-old is above $5,500 in half the cities surveyed, including 11 urban areas where child care center costs for an infant average more than $7,000 per year.

The cost of child care is high not only for families living in urban areas, those using center-based care, or those with younger children — all families face high child care costs. A survey of average child care costs reveals:

- **Child care is costly even in rural areas.** While child care prices are somewhat lower in rural areas, even families in rural communities often cannot escape the high cost of child care. In most of the rural areas for which CDF collected data, the cost of center care for a preschool child falls between $3,000 and $5,000 per year. For example, the average annual cost of center care for a 4-year-old in Mercer County, W.V. is $3,500 and in the rural area of Franklin County, Mo., the cost is nearly $4,000 (Appendix, Table A-3)

- **Family child care, while generally less costly than center-based care, is still expensive for many families.** In nearly half the urban areas surveyed, the average cost of family child care for a 4-year-old is over $4,500 per year. This cost of family child care is generally even higher for infants, which is particularly significant given that many parents prefer to use family child care when their children are very young (Appendix, Table A-5).

- **Even part-time care for school-age children can total $3,000 per year or more.** School-age children with working parents do not need full-time care, but they often do need care before and after school and during holidays and vacations. The hours spent in care quickly add up, as do the costs. In half of the urban areas surveyed, the average annual cost of school-age care in a center is above $3,500 (Appendix, Table A-8).[6]

- **While some families may be able to avoid these high costs of child care by relying on a relative to provide care, for many families this is not an option.** Many families do not have relatives living close by, or find that their relatives are working to support themselves and their families. Two out of three children younger than age 5 cared for by someone other than their parents — and more than three out of four children age 4 — are cared for by non-relatives.[7] Even when families use relative care, they may find themselves paying for it.

Low-Income Families Face Particular Challenges Affording Child Care

The high cost of care presents a challenge to all families, but it is particularly burdensome for low-income families. These families must have reliable child care so that parents can get and keep the jobs they need to lift themselves out of — and stay out of — poverty. Since the new welfare system no longer assures them of a safety net should they lose their jobs, safe reliable child care has become even more important to their families' well-being.

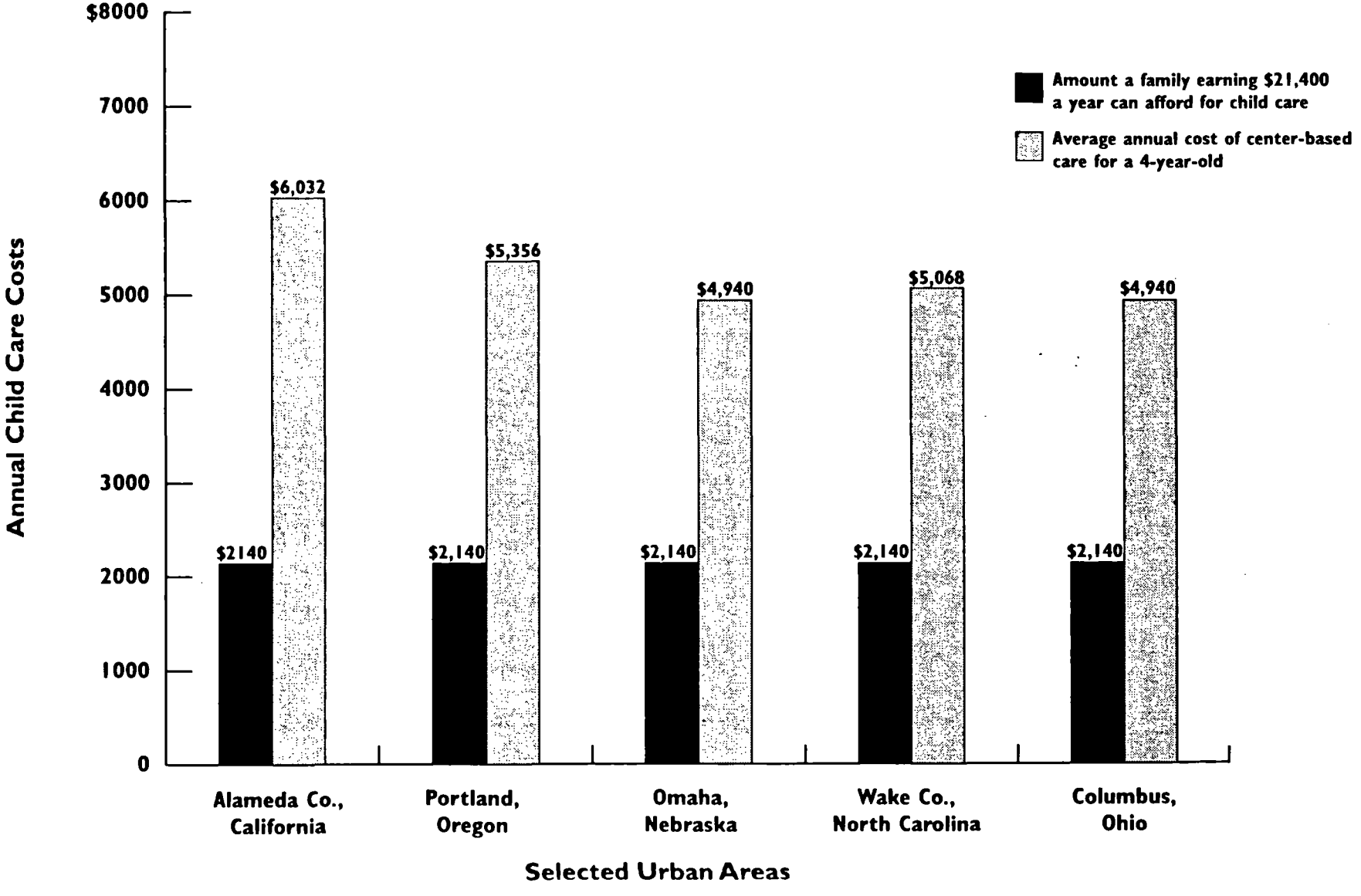
High-quality care is also essential because it can support children's healthy development and can provide low-income children the extra boost they need to enter school ready to succeed. Yet, low-income families, who need child care to keep their jobs and help their children grow and learn, stretch their budgets as much as possible only to find that high-quality care is still out of reach.

A low-income family with two parents working full time at the federal minimum wage ($21,400 a year before taxes) might reasonably be expected to spend 10 percent of its income — $2,140 a year — on child care. This is higher than the 7.5 percent of income families across the country spend on child care.[8] Given a low-income family's expenses for other essentials such as food, rent, and health care, it would be challenging to spend much more than $1 out of $10 dollars on child care. Yet, as shown in the graph on the following page, budgeting even this amount for child care would leave this family thousands of dollars short of the amount needed to purchase average-priced care for their child in many communities (see Appendix, Table A-11 for data on the shortfall for families living in additional cities). Even if the family somehow managed to spend 20 percent of their income on child care, they would still only be able to afford a fraction of the cost of average-priced care. High-quality care, which is often even more expensive, would in most cases be entirely inaccessible.

Families facing high child care costs have few places to turn for help. Only a limited number have access to help paying for child care. State and federal funds are so insufficient that only one out of 10 children in low-income working families who are eligible under federal law and who need assistance are able to receive it.

Low-Income Families Struggle to Afford Care

The Shortfall Between What Child Care Costs and What Low-Income Parents Can Afford (10 Percent of Their Income) in Selected Urban Areas



Source: K. Schulman and G. Adams, *The High Cost of Child Care Puts Quality Care Out of Reach for Many Families*, (Washington, DC: Children's Defense Fund, 1998).

The Dilemma: Child Care Costs Cannot Go Lower Without Jeopardizing Quality

The problem of high child care costs cannot be remedied by turning to child care providers and asking them to lower their prices, as they already operate on very tight budgets. Just as many working families are already squeezing as much out of their limited budgets as possible for child care, child care providers too are already tightening their belts as much as possible to limit expenses and have no room to cut costs further. Any additional cuts would lower the quality of care, which is already unacceptable in many programs.

The largest portion of a family child care home or child care center budget is dedicated to staff salaries, which are already shockingly low. The average salary of a child care worker is under $12,000 a year. Most child care providers also lack benefits such as health insurance or paid sick leave. The low salaries and lack of benefits generate high turnover rates among child care providers. Nationwide, about one-third of child care staff leave their centers each year.[9] This lack of staff continuity is very harmful to children's growth and development, as it breaks the stable relationship they need to have with their caregivers in order to feel safe and secure. Lowering salaries any further would make it even more difficult for child care programs to attract and retain qualified staff and for children to thrive.

Cutting back on the total number of staff in a child care center or family child care home would also diminish the quality of care. Staff–child ratios in many states already allow many child care centers and family child care homes to operate with far too many children per staff member to ensure that children receive adequate supervision and support. A decrease in staff would make it even more difficult for children to receive the one-on-one attention they need to build a strong foundation during their early years.

The remaining costs of operating a child care center or home must go to cover the cost of the facility, equipment, and materials. Children need a safe, roomy facility where they can play, playground equipment that is safe and sturdy, and materials such as books, crayons, and paper that allow for learning and creative activities. Yet far too many programs are unable to invest in these essential components of a quality program. Cutting costs in these areas would further jeopardize children's safety and limit their learning opportunities.

When Quality Child Care Is Unaffordable, Children and Families Pay the Price

Parents shopping for child care find that good quality care cannot be found at a bargain cost — quality care often costs more to provide. Unfortunately, families who are struggling to make ends meet cannot afford these prices and in many cases have no alternative but to choose lower priced care, which is at minimum less than satisfactory and at worst could jeopardize a child's health and safety.

Both children and parents suffer from inadequate investments in child care. Parents cannot be reliable, productive workers without dependable child care. If they are dissatisfied with their child care arrangements, they will constantly be distracted while at work, worrying whether their children are safe and well cared for. And, worse yet, if parents do not have a stable child care arrangement that they can count on each day, they may be unable to keep their jobs and remain independent.

Child care also shapes the way children learn, think, and grow. The quality of care children receive has a particularly significant impact for children from low-income families who may need an extra boost to start school ready to succeed. If children do not receive the care they need to start them on the path to becoming healthy, productive citizens, it is not only the children and their families who suffer, but all of us as a society.

Addressing the High Cost of Care: A Need for Public Commitment

Neither parents nor child care providers can deal with the challenge of high child care costs on their own. The federal government, states, local communities, and the private sector must all play a stronger role in ensuring that families have access to affordable, quality child care.

As a nation, we have made a strong commitment to providing public support for elementary, secondary, and higher education because we have recognized the linkage between learning and a productive workforce. Yet, the early years before a child enters school lay the groundwork for much of a child's brain development and later learning. If we are truly committed to an educated and productive citizenry, we need to make the same commitment to the education of young children as we make to the education of children once they enter school.

Endnotes

[1] Whirlpool Foundation Study by the Families and Work Institute, *Women: The New Providers*. New York: Families and Work Institute, May 1995.
[2] Calculations of data for 1996 from the *1997 Current Population Survey* by the Children's Defense Fund.
[3] Census Bureau, *School Enrollment — Social and Economic Characteristics of Students: October 1996 (Update)*. Washington, DC: Census Bureau, June 1998.
[4] Data collected from local child care resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, January 1998.
[5] Child care costs over the four-year period were calculated assuming that two years of care would be purchased at the price of infant care and two years at the price of care for a 4-year-old, since data were only available for children at ages 1 and 4.
[6] Annual school-age child care costs were calculated from hourly and/or weekly costs reported by resource and referral agencies for a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies. The annual costs include costs for before- and after-school care during school days and costs for care during summer vacations and school holidays. In calculating school-age costs, CDF assumed that children of working parents are in before- and after-school care for a total of 3.5 hours per day, 180 days per year and in full-day care (8 hours per day) during 71 non-school weekdays (the remaining days would be either weekends or the parents' vacation time).
[7] Lynne M. Casper, *Who's Minding Our Preschoolers? Fall 1994, Current Population Reports Household Economic Studies, P70-62*. Washington, DC: Census Bureau, November 1997.
[8] Casper, *What Does It Cost to Mind Our Preschoolers? Current Population Reports Household Economic Studies, P70-52*. Washington, DC: Census Bureau, September 1995.
[9] Center for the Child Care Workforce, *Worthy Work, Unlivable Wages: The National Child Care Staffing Study, 1988-1997*. Washington, DC: Center for the Child Care Workforce, 1998.

APPENDIX: TABLES AND KEY SUMMARY POINTS

Key Findings from Table A-1.
Comparison of Child Care Costs to Public College Tuition Costs

- In all states but Vermont, the cost of child care for a 4-year-old in an urban area center is more than the cost of public college tuition.

- The cost of child care for an infant in an urban area center is more than the cost of public college tuition in every state.

- In about one-third of the states, the average cost of child care for a 4-year-old in an urban area center is twice the cost of public college tuition.

Table A-1. Comparison of Average Annual Child Care Costs in Urban Area Centers to Average Annual Public College Tuition Costs

Location State	Urban area	Average annual cost in a child care center: For a 12-month-old	Average annual cost in a child care center: For a four-year-old	Comparison of average child care costs to the average cost of public college tuition: Average annual cost of public college tuition	As percent of child care costs for a 12-month-old	As percent of child care costs for a 4-year-old
Alabama	Birmingham	$3,833	$3,342	$2,363	62%	71%
Alaska	Anchorage	6,660	5,784	2,552	38	44
Arizona	Tucson	5,159	4,188	2,009	39	48
Arkansas	Fayetteville, Rogers, and Bentonville	4,420	3,900	2,255	51	58
California	Alameda County	6,864	6,032	2,731	40	45
Colorado	Denver	5,096	4,576	2,562	50	56
Connecticut	Hartford	7,194	5,710	4,105	57	72
Delaware	Wilmington	5,782	4,871	4,180	72	86
Florida	Urban counties	4,387	3,844	1,789	41	47
Georgia	Atlanta	4,524	4,992	2,244	50	45
Hawaii	Honolulu	7,270	6,188	2,298	32	37
Idaho	Ada County (Boise)	4,896	4,354	1,973	40	45
Illinois	Cook County (Chicago)	8,268	5,304	3,525	43	66
Indiana*	Central Indiana (mid-range)	6,266	4,966	3,200	51	64
Iowa*	Statewide	5,211	4,458	2,655	51	60
Kansas	Johnson County (Kansas City)	6,760	5,200	2,223	33	43
Kentucky	Louisville	4,320	3,905	2,241	52	57
Louisiana	New Orleans	3,677	3,470	2,230	61	64
Maine	Portland	6,916	5,356	3,639	53	68
Maryland	Baltimore (city only)	7,980	4,528	3,848	48	85
Massachusetts	Boston	12,324	7,904	4,266	35	54
Michigan	Wayne County (Detroit)	6,056	4,715	3,986	66	85
Minnesota	Minneapolis	9,447	6,662	3,539	37	53
Mississippi*	Statewide	3,406	3,172	2,497	73	79
Missouri	Greater St. Louis	5,200	4,940	3,230	62	65
Montana	Missoula County	4,680	3,900	2,488	53	64
Nebraska	Omaha	5,200	4,940	2,269	44	46
Nevada	Washoe County (Reno)	5,200	4,420	1,814	35	41
New Hampshire	Nashua	7,228	5,876	4,644	64	79
New Jersey	Trenton	5,824	4,628	4,269	73	92
New Mexico	Albuquerque metro area	4,903	4,190	2,016	41	48
New York	Albany County	7,956	6,708	3,797	48	57
North Carolina	Wake County	5,836	5,068	1,841	32	36

(table continues)

Table A-1 (continued). Comparison of Average Annual Child Care Costs in Urban Area Centers to Average Annual Public College Tuition Costs

Location State	Urban area	Average annual cost in a child care center		Comparison of average child care costs to the average cost of public college tuition		
		For a 12-month-old	For a 4-year-old	Average annual cost of public college tuition	As percent of child care costs for a 12-month-old	As percent of child care costs for a 4-year-old
North Dakota	Urban areas	$4,885	$4,193	$2,381	49%	57%
Ohio	Columbus	6,500	4,940	3,834	59	78
Oklahoma	Tulsa, Oklahoma, Cleveland, and Canadian counties	4,628	4,056	1,936	42	48
Oregon	Salem	5,857	4,723	3,407	58	72
Pennsylvania	Allegheny County	6,664	5,465	4,994	75	91
Rhode Island	Providence	6,500	4,420	3,907	60	88
South Carolina	Columbia	3,900	3,380	3,206	82	95
South Dakota	Sioux Falls	4,420	3,900	2,727	62	70
Tennessee	Knoxville	3,633	3,446	2,051	56	60
Texas	Dallas	4,838	3,789	2,022	42	53
Utah	Provo	4,837	3,488	2,010	42	58
Vermont	Burlington	6,604	5,876	6,538	99	111
Virginia	Fairfax	8,892	7,020	3,962	45	56
Washington	Seattle	8,840	6,136	2,928	33	48
West Virginia	Huntington	4,888	3,484	2,088	43	60
Wisconsin	Dane County	7,696	6,240	2,747	36	44
Wyoming	Casper	4,784	3,848	2,144	45	56

*Notes:
Indiana provided information on an average cost range for each region of the state; the mid-point of the range for Central Indiana is presented here.
For Mississippi and Iowa, urban area data were not available; therefore, statewide cost figures are presented here instead.

Sources: Data on child care costs collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998. Data on average university costs from U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment" and "Institutional Characteristics" surveys, October 1997.

Key Findings from Tables A-2–A-4.
Child Care Centers: Average Annual Costs

- The average cost of center care for a 4-year-old in an urban area exceeds $4,000 in over two-thirds of the states and is over $5,000 in one-third of the states (Table A-2).

- The average cost of center care for a 12-month-old in an urban area is above $5,500 per year in half the states, including 11 urban areas where child care center costs for an infant average more than $7,000 per year (Table A-2).

- In cities, average child care costs can be hundreds or thousands of dollars more than the statewide average. However, the pattern is not uniform nationwide. In some cities, such as Providence, R.I., Columbia, S.C. and Detroit, average child care costs for infants and preschoolers are lower than the statewide averages (Tables A-2 and A-4).

- In over half of the 39 rural areas for which data on this type of care are available, average child care center costs for 4-year-olds are above $3,500 per year, including seven rural areas where average child care center costs for 4-year-olds are above $5,000 per year (Table A-3).

- In half the 35 rural areas for which we have data on this type of care, average child care center costs for 12-month-olds are above $4,500 per year, including 11 rural areas where average child care center costs for 12-month-olds are above $5,000 per year (Table A-3).

- Of the 30 states providing statewide data on this type of care, the average annual cost of center care for a 4-year-old is above $4,000 in over half (18), including three states where the cost is above $6,000 (Table A-4).

- Among the states for which we have statewide data, the average cost of center care for a 4-year-old ranges from $3,120 per year in West Virginia to $7,119 in Massachusetts (Table A-4).

- The statewide average cost of infant care in a center is more than $4,000 per year in 24 out of 30 states for which data are available, and $5,000 per year or more in about half of the states (Table A-4).

- Among the states for which we have statewide data, the statewide average cost of center care for an infant ranges from $3,318 per year in Kentucky to $9,854 per year in Massachusetts (Table A-4)

- In six states (California, Connecticut, Maryland, Massachusetts, Minnesota, and Rhode Island), the average statewide cost of center care for an infant is $7,000 per year or more (Table A-4).

Table A-2. Child Care Centers: Average Annual Costs in Urban Areas

State	Urban area (47 urban areas total)	Average annual cost of center care for a 4-year-old	Average annual cost of center care for a 12-month-old
Alabama	Birmingham	$3,342	$3,833
Alaska	Anchorage	5,784	6,660
Arizona	Tucson	4,087	5,058
Arkansas	Fayetteville, Rogers, and Bentonville	3,900	4,420
California	Alameda County	6,032	6,864
Colorado	Denver	4,576	5,096
Connecticut	Hartford	5,710	7,194
Delaware	Wilmington	4,871	5,782
Florida	Urban counties	3,844	4,387
Georgia	Atlanta	4,992	4,524
Hawaii	Honolulu	6,188	7,270
Idaho	Ada County (Boise)	4,354	4,896
Illinois	Cook County (Chicago)	5,304	8,268
Indiana		not available	not available
Iowa		not available	not available
Kansas	Johnson County (Kansas City)	5,200	6,760
Kentucky	Louisville	3,905	4,320
Louisiana	New Orleans metro area	3,470	3,677
Maine	Portland	5,356	6,916
Maryland	Baltimore (city only)	4,528	7,980
Massachusetts	Boston	7,904	12,324
Michigan	Wayne County (Detroit)	4,715	6,056
Minnesota	Minneapolis	6,662	9,447
Mississippi		not available	not available
Missouri	Greater St. Louis	4,940	5,200
Montana	Missoula County	3,900	4,680
Nebraska	Omaha	4,940	5,200
Nevada	Washoe County (Reno)	4,420	5,200
New Hampshire	Nashua	5,876	7,228
New Jersey	Trenton	4,628	5,824
New Mexico	Albuquerque metro area	4,190	4,903
New York	Albany County	6,708	7,956
North Carolina	Wake County	5,068	5,836
North Dakota	Urban areas	4,193	4,885
Ohio	Columbus	4,940	6,500
Oklahoma	Tulsa, Oklahoma, Cleveland, Canadian cos.	4,056	4,628
Oregon	Salem	4,723	5,857
Pennsylvania	Allegheny County	5,465	6,664
Rhode Island	Providence	4,420	6,500
South Carolina	Columbia	3,380	3,900

(table continues)

Table A-2 (continued). Child Care Centers: Average Annual Costs in Urban Areas

State	Urban area	Average annual cost of center care for a 4-year-old	Average annual cost of center care for a 12-month-old
South Dakota	Sioux Falls	$3,900	$4,420
Tennessee	Knoxville	3,446	3,633
Texas	Dallas	3,789	4,838
Utah	Provo	3,488	4,837
Vermont	Burlington	5,876	6,604
Virginia	Fairfax	7,020	8,892
Washington	Seattle	6,136	8,840
West Virginia	Huntington	3,484	4,888
Wisconsin	Dane County	6,240	7,696
Wyoming	Casper	3,848	4,784

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

Table A-3. Child Care Centers: Average Annual Costs in Rural Areas

State	Rural area (39 rural areas total)	Average annual cost of center care for a 4-year-old	Average annual cost of center care for a 12-month-old
Alabama	Blount County	$2,934	$3,293
Arizona	Yuma County	3,184	3,900
Arkansas	Rural counties	3,120	3,640
California	Fresno County	5,044	6,552
Colorado	Southeastern rural counties	3,444	3,480
Connecticut	Southbury	7,010	7,717
Delaware	Sussex County	3,636	4,321
Florida	Florida's rural counties	3,496	3,825
Georgia	Tifton/Tift	2,756	2,860
Hawaii	Waianae	4,083	not available
Idaho	Rural areas	3,024	3,287
Iowa	Fort Madison	2,990	3,380
Kansas	Neosho County (Chanute)	3,120	not available
Kentucky	Bullitt County	3,331	3,700
Louisiana	Lafayette	3,187	3,438
Maine	Gray	5,200	5,720
Maryland	Allegany, Garrett, Washington cos.	3,636	4,560
Massachusetts	Hampshire County	6,812	8,164
Michigan	Muskegan County	4,505	4,786
Minnesota	Clay County	4,394	5,213
Missouri	Franklin County	3,900	3,900
Montana	Ravalli County	3,536	not available
Nebraska	Fremont	4,290	4,550
New Hampshire	Cheshire County	5,044	6,032
New Jersey	Somerset County	7,176	8,164
New York	Broome County (Binghamton)	5,148	5,616
North Carolina	Davidson County	3,650	4,011
North Dakota	Rural areas	3,863	4,176
Ohio	Lorain County	4,420	5,824
Oklahoma	59 Rural counties	2,808	3,068
Oregon	Wasco and Hood River counties	3,858	4,797
Pennsylvania	Lawrence	4,935	5,915
Rhode Island	Burrillville	3,900	not available
South Carolina	Williamsburg County	2,578	3,043
Utah	Richfield	3,055	4,420
Virginia	Norfolk	2,860	4,680
Washington	Chelan and Douglas counties	4,108	4,888
West Virginia	Mercer County	3,510	4,420
Wisconsin	Calumet County	4,004	5,629

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

Table A-4. Child Care Centers: Average Annual Costs Statewide

State (31 states total)	Average annual cost of center care for a 4-year-old	Average annual cost of center care for a 12-month-old
California	$4,888	$7,020
Colorado	4,035	not available
Connecticut	6,487	8,231
Delaware	4,531	5,492
Florida	3,813	4,762
Georgia	3,900	4,576
Hawaii	4,744	6,500
Illinois	4,921	6,987
Iowa	4,458	5,211
Kentucky	3,276	3,318
Louisiana	3,264	3,471
Maryland	4,968	7,919
Massachusetts	7,119	9,854
Michigan	4,970	6,287
Minnesota	6,072	8,273
Mississippi	3,172	3,406
Nevada	4,160	4,490
New Hampshire	5,096	6,084
New Mexico	3,943	4,487
New York	5,612	6,346
North Carolina	3,696	4,776
North Dakota	4,083	4,619
Ohio	4,056	4,940
Oklahoma	3,536	3,952
Rhode Island	4,784	7,020
South Carolina	3,744	4,160
South Dakota	not available	4,680
Texas	3,335	3,647
Utah	3,266	4,351
Washington	4,992	6,708
West Virginia	3,120	3,432

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

Key Findings from Tables A-5–A-7.
Family Child Care: Average Annual Costs

- In nearly half of the urban areas for which we have data on this type of care (21 out of 44 cities), the average cost of family child care for a 4-year-old is over $4,500 per year (Table A-5).

- In over half of the urban areas for which we have data on this type of care (24 out of 45 cities), the average cost of family child care for a 12-month-old is more than $4,500 per year, including 10 cities where the average cost is higher than $5,500 per year (Table A-5).

- In half of the rural areas for which we have data on this type of care (20 out of 40 rural areas), the average cost of family child care for a 4-year-old is over $3,700 per year (Table A-6).

- In over half of the rural areas for which we have data on this type of care (24 out of 39 rural areas), the average cost of family child care for a 12-month-old is $3,900 per year or more (Table A-6).

- In general, family child care is somewhat less expensive than center care. However, in a number of communities—especially rural communities—the average cost of family child care is higher than the average cost of center care. For instance, in 11 states (Alabama, Arizona, Arkansas, Connecticut, Georgia, Hawaii, Maryland, Montana, New Jersey, Oregon, and Rhode Island), the rural area surveyed has higher average costs for family child care than for center care for an infant and/or preschooler.

Table A-5. Family Child Care: Average Annual Costs in Urban Areas

State	Urban area (46 urban areas total)	Average annual cost of family child care for a 4-year-old	Average annual cost of family child care for a 12-month-old
Alabama	Birmingham	$3,324	$3,408
Alaska	Anchorage	5,784	5,844
Arizona	Tucson	3,608	3,826
Arkansas	Fayetteville, Rogers, and Bentonville	3,380	4,420
California	Alameda County	5,200	5,668
Colorado	Denver	4,576	5,096
Connecticut	Hartford	4,825	5,258
Delaware	Wilmington	3,983	4,349
Georgia	Atlanta	5,200	5,616
Hawaii	Honolulu	5,212	5,224
Idaho	Ada County (Boise)	4,064	4,218
Illinois	Cook County (Chicago)	4,836	5,460
Iowa	Davenport	3,864	3,960
Kansas	Johnson County (Kansas City)	4,940	5,200
Kentucky	Louisville	3,602	3,869
Louisiana	New Orleans metro area	2,421	2,444
Maine	Portland	5,148	5,772
Maryland	Baltimore (city only)	4,159	4,835
Massachusetts	Boston	6,175	6,646
Michigan	Wayne County (Detroit)	4,628	5,198
Minnesota	Minneapolis	5,088	5,419
Missouri	Greater St. Louis	3,900	4,420
Montana	Missoula	3,900	4,420
Nebraska	Omaha	4,680	4,680
New Hampshire	Nashua	5,460	5,876
New Jersey	Trenton	4,264	4,628
New York	Albany County	5,200	5,980
North Carolina	Wake County	5,008	5,068
North Dakota	Average of eight largest cities	4,016	4,152
Ohio	Columbus	4,108	4,472
Oklahoma	Canadian, Cleveland, Oklahoma, and Tulsa	3,276	3,536
Oregon	Salem	4,085	4,285
Pennsylvania	Northeast Philadelphia	4,625	4,992
Rhode Island	Providence	3,900	4,524
South Carolina	Columbia	3,428	3,521
South Dakota	Minnehaha	not available	3,770
Tennessee	Knoxville	3,345	3,428
Texas	Dallas	3,375	3,877
Utah	Provo	3,722	3,836
Vermont	Burlington	5,148	5,200
Virginia	Fairfax	6,708	7,280
Washington	Seattle	5,824	6,916
West Virginia	Wheeling	3,900	4,290
Wisconsin	Dane County	6,188	6,760
Wyoming	Casper	3,380	3,900

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

Table A-6. Family Child Care: Average Annual Costs in Rural Areas

State	Rural area (40 rural areas total)	Average annual cost of family child care for a 4-year-old	Average annual cost of family child care for a 12-month-old
Alabama	Blount County	$3,118	$3,135
Arizona	Yuma	3,207	3,321
Arkansas	Rural counties	3,120	3,900
California	Fresno County	4,607	4,904
Colorado	Southeastern rural counties	3,357	3,449
Connecticut	Southbury	7,696	7,878
Delaware	Sussex County	3,331	3,565
Georgia	Tifton/Tift	2,860	2,860
Hawaii	Waianae	4,704	4,652
Idaho	Rural counties	3,002	3,233
Iowa	Oskaloosa	3,925	4,174
Kansas	Ft. Scott, Bourbon County	2,600	2,860
Kentucky	Bullitt County	3,068	3,315
Louisiana	Lafayette	2,714	2,919
Maine	Gray	4,576	4,888
Maryland	Allegany, Garrett, and Washington cos.	3,670	3,992
Massachusetts	Hampshire County	6,552	6,708
Michigan	Muskegan County	4,482	4,555
Minnesota	Clay County	3,969	4,039
Missouri	Warren County	3,380	3,900
Montana	Ravalli County	3,770	3,900
Nebraska	Fremont	3,900	3,900
New Hampshire	Cheshire County	4,056	3,796
New Jersey	Somerset County	8,320	8,476
New York	Broome County (Binghamton)	4,420	4,680
North Carolina	Davidson County	3,651	3,939
North Dakota	Rural areas	3,849	3,944
Ohio	Lorain County	4,212	4,316
Oklahoma	59 Rural counties	2,808	3,068
Oregon	Wasco and Hood River counties	4,095	4,095
Pennsylvania	Lawrence	4,610	4,706
Rhode Island	Burrillville	5,148	not available
South Carolina	Williamsburg County	2,578	3,043
South Dakota	Brookings	3,120	3,120
Utah	Richfield	2,887	3,420
Vermont	Hinesburg	4,420	4,628
Virginia	Norfolk	2,600	3,380
Washington	Chelan and Douglas counties	3,588	3,952
West Virginia	Lincoln County	2,600	3,120
Wisconsin	Adams County	4,615	5,148

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

Table A-7. Family Child Care: Average Annual Costs Statewide		
State (29 states total)	Average annual cost of family child care for a 4-year-old	Average annual cost of family child care for a 12-month-old
Arizona	$3,473	$3,659
Colorado	4,035	not available
Connecticut	6,407	8,231
Delaware	4,075	4,375
Georgia	3,380	3,900
Hawaii	4,836	4,913
Illinois	4,242	4,600
Iowa	3,964	4,108
Kentucky	3,150	3,235
Louisiana	2,595	2,677
Maryland	4,544	5,330
Massachusetts	7,116	7,380
Michigan	4,789	4,799
Minnesota	4,481	4,694
Mississippi	2,080	2,210
New Hampshire	5,044	5,304
New Mexico	3,133	3,637
New York	4,718	5,020
North Carolina	3,648	3,936
North Dakota	3,957	4,079
Ohio	3,900	4,108
Oklahoma	3,120	3,432
Rhode Island	4,680	5,356
South Carolina	3,432	3,640
South Dakota	not available	3,510
Utah	3,145	3,597
Vermont	4,193	4,803
Washington	4,576	5,356
West Virginia	2,860	3,120

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

Key Findings from Tables A-8–A-10.
School-Age Care: Average Annual Costs

- In half of the urban areas for which we have information about this type of care, the average annual cost of school-age care in a center is above $3,500 (Table A-8).

- In half of the rural areas for which we have information about this type of care, the average annual cost of school-age care in a center exceeds $2,500 (Table A-9).

Table A-8. School-Age Care: Average Annual Costs in Urban Areas

State	Urban area (43 urban areas total)	Average annual cost for center care for a school-age child	Average annual cost for family child care for a school-age child
Alabama	Birmingham	$2,013	$2,061
Alaska	Anchorage	4,016	4,016
Arizona	Tucson	3,283	3,630
Arkansas	Fayetteville, Rogers, and Bentonville	2,396	2,396
California	Alameda County	4,133	4,133
Colorado	Denver	4,193	3,366
Connecticut	Hartford	4,493	4,229
Delaware	Wilmington	3,295	3,929
Georgia	Atlanta	3,081	3,423
Hawaii*	Honolulu	$55/month	not available
Idaho	Ada County (Boise)	4,205	2,648
Illinois	Cook County (Chicago)	4,587	4,587
Iowa	Davenport	not available	2,456
Kansas	Johnson County (Kansas City)	3,423	2,738
Kentucky	Louisville	3,965	3,295
Louisiana	New Orleans metro area	1,833	1,975
Maine	Portland	3,894	4,325
Maryland	Baltimore (city only)	3,306	3,354
Massachusetts	Boston	4,929	5,523
Michigan	Wayne County (Detroit)	2,348	2,144
Minnesota	Minneapolis	5,667	3,929
Montana	Missoula County	2,995	2,246
Nebraska	Omaha	3,055	3,295
New Hampshire	Nashua	3,834	3,953
New Jersey	Trenton	4,450	4,193
New York	Albany County	4,660	3,450
North Carolina	Wake County	3,304	3,289
North Dakota	Urban areas	2,636	2,216
Ohio	Columbus	2,636	2,366
Oklahoma	Tulsa, Oklahoma, Cleveland, and Canadian cos.	4,244	3,628
Oregon	Salem	2,396	2,192
Pennsylvania*	Allegheny County and northeast Philadelphia	4,385	3,577
Rhode Island	Providence	6,948	3,594
South Carolina	Columbia	2,396	2,396
Tennessee	Knoxville	3,311	3,636
Texas	Dallas	3,822	2,959
Utah	Provo	2,995	1,941
Vermont	Burlington	3,002	3,414

(table continues)

Table A-8 (continued). School-Age Care: Average Annual Costs in Urban Areas

State	Urban area	Average annual cost for center care for a school-age child	Average annual cost for family child care for a school-age child
South Carolina	Columbia	2,396	2,396
Tennessee	Knoxville	3,311	3,636
Texas	Dallas	3,822	2,959
Utah	Provo	2,995	1,941
Vermont	Burlington	3,002	3,414
Virginia	Fairfax	6,240	5,460
Washington	Seattle	4,972	4,241
West Virginia	Huntington	2,396	not available
Wisconsin	Dane County	4,373	3,594
Wyoming	Casper	not available	2,037

*Notes:
Hawaii's Department of Education funds the "A+" After-School Program in every school in Hawaii; the cost to the parent is reflected here.
In Pennsylvania, center costs are for Allegheny County; family child care costs are for northeast Philadelphia.

Source: Annual school-age child care costs were calculated from hourly and/or weekly costs reported by resource and referral agencies for a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies. The annual costs include costs for before- and after-school care during school days and costs for care during summer vacations and school holidays. In calculating school-age costs, CDF assumed that children of working parents are in before- and after-school care for a total of 3.5 hours per day, 180 days per year and in full-day care (8 hours per day) during 71 non-school weekdays (the remaining days would be either weekends or the parents' vacation time).

Table A-9. School-Age Care: Average Annual Costs in Rural Areas

State	Child care center costs: Rural area (35 rural areas total)	Child care center costs: Average annual cost for a school-age child	Family child care costs: Rural area (37 rural areas total)	Family child care costs: Average annual cost for a school-age child
Alabama	Blount County	$1,198	Blount County	$1,653
Arizona	Yuma County	2,588	Yuma	1,450
Arkansas	Rural counties	2,396	Rural counties	2,396
California	Fresno County	3,414	Fresno County	2,935
Colorado	Southeastern rural counties	3,977	Southeastern rural counties	3,994
Connecticut	Southbury	4,792	Southbury	4,564
Delaware	Sussex County	2,755	Sussex County	3,019
Georgia	Tifton/Tift	1,711	Tifton/Tift	1,711
Hawaii*	Waianae	$55/month	Waianae	3,594
Iowa	Fort Madison	1,797	Oskaloosa	2,013
Kansas	Neosho County (Chanute)	2,791	Bourbon County (Ft. Scott)	1,641
Louisiana	Lafayette	2,073	Lafayette	1,369
Maine	Gray	4,450	Gray	3,738
Maryland	Allegany, Garrett, Washington cos.	2,612	Allegany, Garrett, Washington	2,684
Massachusetts	Hampshire County	3,971	Hampshire County	3,486
Michigan	Muskegan County	2,648	Muskegan County	2,312
Minnesota	Clay County	2,396	Clay County	2,144
Montana	Ravalli County	2,037	Ravalli County	2,696
Nebraska	Fremont	2,696	Fremont	2,097
New Hampshire	Cheshire County	3,295	Cheshire County	2,791
New Jersey	Somerset County	4,792	Somerset County	4,792
New York	Broome County (Binghamton)	not available	Broome County (Binghamton)	3,127
North Carolina	Davidson County	1,818	Davidson County	2,396
North Dakota	Rural areas	2,168	Rural areas	2,085
Ohio	Lorain County	2,216	Lorain County	2,396
Oklahoma	59 Rural counties	3,217	59 Rural counties	3,286
Oregon	Wasco and Hood River counties	1,941	Wasco and Hood River cos.	2,049
Pennsylvania	Lawrence	3,793	Lawrence	3,748
Rhode Island	Burrillville	4,792	Burrillville	4,792
South Carolina	Williamsburg County	2,276	Williamsburg County	2,276
South Dakota	Brookings	2,432	Brookings	2,432
Utah	Richfield	2,995	Richfield	1,917
Vermont	Hinesburg	not available	Hinesburg	3,354
Virginia	Norfolk	3,900	Norfolk	1,300

(table continues)

Table A-9 (continued). School-Age Care: Average Annual Costs in Rural Areas				
	Child care center costs		Family child care costs	
State	Rural area (35 rural areas total)	Average annual cost for a school-age child	Rural area (37 rural areas total)	Average annual cost for a school-age child
Washington	Chelan and Douglas counties	$2,360	Chelan and Douglas counties	$2,600
West Virginia	Mercer County	2,001	Lincoln County	2,396
Wisconsin	Calumet County	2,731	Adams County	3,989

*Note: Hawaii's Department of Education funds the "A+" After-School Program in every school is Hawaii—the cost to the parent is reflected here.

Source: Annual school-age child care costs were calculated from hourly and/or weekly costs reported by resource and referral agencies for a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies. The annual costs include costs for before- and after-school care during school days and costs for care during summer vacations and school holidays. In calculating school-age costs, CDF assumed that children of working parents are in before- and after-school care for a total of 3.5 hours per day, 180 days per year and in full-day care (8 hours per day) during 71 non-school weekdays (the remaining days would be either weekends or the parents' vacation time).

Table A-10. School-Age Care: Average Annual Costs Statewide		
State (28 states total)	Average annual cost of center care for a school-age child	Average annual cost of family child care for a school-age child
Arizona	not available	$3,522
California	$3,594	not available
Connecticut	4,504	4,193
Delaware	3,618	3,546
Georgia	1,711	2,738
Hawaii	$55/month*	2,875
Illinois	3,402	2,767
Iowa	2,432	2,288
Kentucky	3,798	2,779
Louisiana	2,480	2,000
Maryland	3,654	3,606
Massachusetts	4,261	4,493
Michigan	2,887	2,384
Minnesota	4,672	2,827
Mississippi	2,779	1,773
Nevada	2,738	not available
New Hampshire	2,995	3,678
New York	3,378	3,378
North Dakota	2,420	2,156
Ohio	2,216	2,186
Oklahoma	2,612	3,882
Rhode Island	6,589	3,594
South Carolina	2,995	2,396
Texas	2,869	not available
Utah	3,079	2,624
Vermont	not available	2,648
Washington	3,989	3,366
West Virginia	2,396	2,396

*Note: Hawaii's Department of Education funds the "A+" After-School Program in every school is Hawaii; the cost to the parent is reflected here.

Source: Annual school-age child care costs were calculated from hourly and/or weekly costs reported by resource and referral agencies for a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies. The annual costs include costs for before- and after-school care during school days and costs for care during summer vacations and school holidays. In calculating school-age costs, CDF assumed that children of working parents are in before- and after-school care for a total of 3.5 hours per day, 180 days per year and in full-day care (8 hours per day) during 71 non-school weekdays (the remaining days would be either weekends or the parents' vacation time).

Key Findings from Table A-11.
Shortfall Between What Low-Income Parents Can Afford (10 Percent of Their Gross Income) and What Average-Priced Child Care Costs in Urban Area Centers

- In 35 out of the 50 states, the average annual cost of care for a 4-year-old child in an urban area center would be over $2,000 more than a two-parent family with both parents working full-time at minimum wage ($21,400 per year before taxes) could afford if they spent 10 percent of their income on child care.

- In half the states, the average annual cost of care for two children (a 4-year-old and a 12-month-old) in an urban area center would be over $8,000 more than a two-parent family with both parents working at minimum wage ($21,400 per year before taxes) could afford if they spent 10 percent of their income on child care.

Table A-11. Shortfall Between What Low-Income Parents Can Afford (10 Percent of Their Gross Income) and What Average-Priced Child Care Costs in Urban Area Centers

Location		Average annual costs in a child care center		Amount a two-parent family with both parents working full time at minimum wage ($21,400/yr) can afford for child care	Shortfall between what a low-income family can afford for child care and the average annual cost in a child care center	
State	Urban area	For a 4-year-old	For a 12-month-old		For one child	For two children
Alabama	Birmingham	$3,342	$ 7,175	$2,140	-$1,202	-$5,035
Alaska*	Anchorage	5,784	12,444	2,140	- 3,644	-10,304
Arizona	Tucson	4,188	9,347	2,140	- 2,048	- 7,207
Arkansas	Fayetteville, Rogers, and Bentonville	3,900	8,320	2,140	- 1,760	- 6,180
California	Alameda County	6,032	12,896	2,140	- 3,892	-10,756
Colorado	Denver	4,576	9,672	2,140	- 2,436	- 7,532
Connecticut*	Hartford	5,710	12,904	2,140	- 3,570	-10,764
Delaware	Wilmington	4,871	10,653	2,140	- 2,731	- 8,513
Florida	Urban counties	3,844	8,231	2,140	- 1,704	- 6,091
Georgia	Atlanta	4,992	9,516	2,140	- 2,852	- 7,376
Hawaii*	Honolulu	6,188	13,458	2,140	- 4,048	-11,318
Idaho	Ada County (Boise)	4,354	9,250	2,140	- 2,214	- 7,110
Illinois *	Cook County (Chicago)	5,304	13,572	2,140	- 3,164	-11,432
Indiana *	Central Indiana (mid-range)	4,966	11,232	2,140	- 2,826	- 9,092
Iowa *	Statewide	4,458	9,669	2,140	- 2,318	- 7,529
Kansas	Johnson County (Kansas City)	5,200	11,960	2,140	- 3,060	- 9,820
Kentucky	Louisville	3,905	8,225	2,140	- 1,765	- 6,085
Louisiana	New Orleans	3,470	7,147	2,140	- 1,330	- 5,007
Maine	Portland	5,356	12,272	2,140	- 3,216	-10,132
Maryland	Baltimore (city only)	4,528	12,508	2,140	- 2,388	-10,368
Massachusetts*	Boston	7,904	20,228	2,140	- 5,764	-18,088
Michigan	Wayne County (Detroit)	4,715	10,771	2,140	- 2,575	- 8,631
Minnesota	Minneapolis	6,662	16,109	2,140	- 4,522	-13,969
Mississippi *	Statewide	3,172	6,578	2,140	- 1,032	- 4,438

(table continues)

Table A-11 (continued). Shortfall Between What Low-Income Parents Can Afford (10 Percent of Their Gross Income) and What Average-Priced Child Care Costs in Urban Area Centers

Location		Average annual costs in a child care center		Amount a two-parent family with both parents working full time at minimum wage ($21,400/yr) can afford for child care	Shortfall between what a low-income family can afford for child care and the average annual cost in a child care center	
State	Urban area	For a 4-year-old	For a 12-month-old		For one child	For two children
Missouri	Greater St. Louis	$4,940	$10,140	$2,140	-$2,800	-$8,000
Montana	Missoula County	3,900	8,580	2,140	- 1,760	- 6,440
Nebraska	Omaha	4,940	10,140	2,140	- 2,800	- 8,000
Nevada	Washoe County (Reno)	4,420	9,620	2,140	- 2,280	- 7,480
New Hampshire	Nashua	5,876	13,104	2,140	- 3,736	-10,964
New Jersey	Trenton	4,628	10,452	2,140	- 2,488	- 8,312
New Mexico	Albuquerque metro area	4,190	9,093	2,140	- 2,050	- 6,953
New York	Albany County	6,708	14,664	2,140	- 4,568	-12,524
North Carolina	Wake County	5,068	10,904	2,140	- 2,928	- 8,764
North Dakota	Urban areas	4,193	9,078	2,140	- 2,053	- 6,938
Ohio	Columbus	4,940	11,440	2,140	- 2,800	- 9,300
Oklahoma	Tulsa, Oklahoma, Cleveland, and Canadian counties	4,056	8,684	2,140	- 1,916	- 6,544
Oregon*	Salem	4,723	10,580	2,140	- 2,583	- 8,440
Pennsylvania	Allegheny County	5,465	12,129	2,140	- 3,325	- 9,989
Rhode Island	Providence	4,420	10,920	2,140	- 2,280	- 8,780
South Carolina	Columbia	3,380	7,280	2,140	- 1,240	- 5,140
South Dakota	Sioux Falls	3,900	8,320	2,140	- 1,760	- 6,180
Tennessee	Knoxville	3,446	7,079	2,140	- 1,306	- 4,939
Texas	Dallas	3,789	8,627	2,140	- 1,649	- 6,487
Utah	Provo	3,488	8,325	2,140	- 1,348	- 6,185
Vermont*	Burlington	5,876	12,480	2,140	- 3,736	-10,340
Virginia	Fairfax	7,020	15,912	2,140	- 4,880	-13,772
Washington	Seattle	6,136	14,976	2,140	- 3,996	-12,836

(table continues)

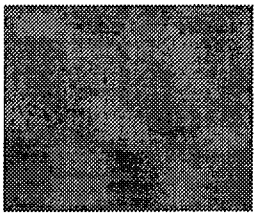
Table A-11 (continued). Shortfall Between What Low-Income Parents Can Afford (10 Percent of Their Gross Income) and What Average-Priced Child Care Costs in Urban Area Centers

Location		Average annual costs in a child care center		Amount a two-parent family with both parents working full time at minimum wage ($21,400/yr) can afford for child care	Shortfall between what a low-income family can afford for child care and the average annual cost in a child care center	
State	Urban area	For a 4-year-old	For a 12-month-old		For one child	For two children
West Virginia	Huntington	$3,484	$8,372	$2,140	-$1,344	-$6,232
Wisconsin	Dane County	6,240	13,936	2,140	- 4,100	-11,796
Wyoming	Casper	3,848	8,632	2,140	- 1,708	- 6,492

* Notes:
Illinois guarantees child care assistance to all families earning less than about $22,000 for a family of three—a family at this income level would be eligible for child care assistance and not have to pay the full cost of care.
Indiana provided information on an average cost range for each region of the state—the mid-point of the range for Central Indiana is used here.
For Iowa and Mississippi, data for an urban area were not available so statewide cost figures are used here instead.
The income level for this hypothetical family was calculated using the federal minimum wage of $5.15 per hour. Some states have a higher hourly minimum wage (Alaska [$5.65]; Connecticut [$5.18]; District of Columbia [$6.15]; Hawaii [$5.25]; Massachusetts [$5.25]; Oregon [$6.00]; Vermont [$5.25]).

Source: Data collected from local resource and referral agencies through a joint survey by the Children's Defense Fund and the National Association of Child Care Resource and Referral Agencies, February 1998.

CDF Board of Directors



Only 10% of Day Care Is Rated Excellent

By Cristine Russell
Special to The Washington Post
Tuesday, February 23, 1999; Page Z08

ANAHEIM—About half of the day care provided for the youngest children in the United States could be considered only "fair" in quality, according to a new study that also found the lowest quality overall is more likely in day-care centers and the highest quality more common in informal home-based arrangements.

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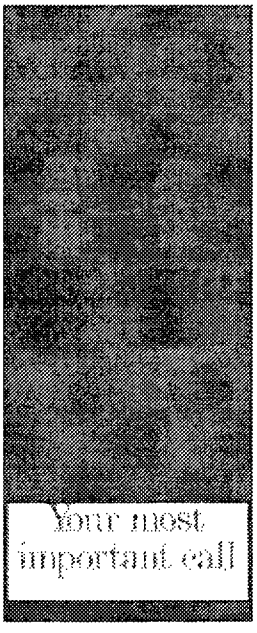

The difficulty of finding high-quality child care is documented in a new national report card from the ongoing federally funded National Institute of Child Health and Human Development (NICHD) study of early child care. It concluded fewer than one in 10 youngsters ages 3 and under are likely to receive "excellent" care, according to University of Washington research professor Cathryn L. Booth. Eight percent of care was deemed "poor," while 53 percent ranked "fair." Nearly one-third, or 30 percent, of care was "good." The rankings, based upon the largest and longest national study of children being looked after by someone other than their mothers, are based on direct observations in a variety of settings.

"We concluded that the average quality of care in the United States is 'adequate'--neither outstanding nor terrible--but there is plenty of room for improvement," said Booth, one of 10 principal investigators in the study. Booth reported the findings at a recent American Association for the Advancement of Science (AAAS) symposium in Anaheim, Calif.

The study, involving more than 1,300 families with children across the country, was launched in 1991 at a time when increasing numbers of mothers were returning to work. Nearly two-thirds of mothers with children under age 6 now work outside the home, compared to 39 percent in 1975. And more than half of infants under age 1 are being routinely cared for by someone other than their mothers, said Booth.

"Day care has come into increasing use in recent years," said NICHD Director Duane Alexander. "NICHD's far-reaching comprehensive study will continue to provide insights into what is, for many families, an absolute necessity."

The researchers participating in the AAAS symposium emphasized that the federal study generally provides reassuring evidence that day care alone does not appear to harm normal child development and may even help in some cases, particularly in the development of reasoning and language skills and peer relationships. But the best outcomes are found in children who are in child-care settings judged high in quality in terms of personal attention.

Booth said the NICHD study has found that caregiving is most likely to be positive under several conditions: when there are fewer children cared for by each adult (less than three children per adult at the youngest ages); when the size of the group is small; when the environment is safe, clean and stimulating; when the caregivers are more educated, experienced and child-centered (rather than strict and authoritarian) in their childrearing beliefs; and when the setting is more informal.

In assessing quality, the researchers looked at five types of child-care arrangements, including child-care centers, child-care homes, in-home sitters, and care by grandparents and fathers. They compared settings when children were 15, 24 and 36 months of age.

"In every type of care, from grandma to centers, we found the complete range of quality. But the chance of finding highly sensitive care is better the less formal it is, at least in the earliest years," said Booth, in part because there are generally fewer children per adult and a greater likelihood of one-to-one interaction between the child and caregiver.

Overall, "the highest level of positive caregiving was provided by in-home caregivers, including fathers and grandparents caring for only one child, closely followed by home-based arrangements with relatively few children per adult. The least positive caregiving was found in center-based care with higher ratios of children to adults," according to a paper by the NICHD Early Child Care Research Network that has been submitted to a journal for publication.

By the time children reach of the age of 3, in-home caregiving was evaluated as somewhat less positive, said Booth. By this age, she said, there are also more potential benefits in having children in group situations in homes or centers.

The federal study involved on-site assessment by observers trained to evaluate "positive" caregiving as well as intensive follow-up of the children to assess emotional, mental and social development. Booth said that the new analysis is the most comprehensive estimate of the quality of child care in this country, since past national samples have relied only on telephone interviews.

Even though the NICHD study is not a representative sample from all

parts of the country, the 1,300 study participants include a diverse range of families in terms of geography (urban, suburban and rural sites in nine states), income, education, ethnicity, composition (single as well as two-parent), and type of child care, as well as roughly equal numbers of boys and girls.

The federal study enrolled families with healthy newborns and followed their patterns of child-care usage. Most of the infants started regular day care for at least 10 hours weekly by 4 months of age, said Booth. At 15 and 36 months, nearly half of the children spent 30 or more hours per week in care.

Observations of the quality of care were based on a four-point scale that was applied to key characteristics of caregiving that are important to healthy child development. Observations totaling nearly three hours over a two-day period were made at 15, 24 and 36 months for each child in the study. Questions asked by the researchers can also be applied informally by parents:

* How does the caregiver respond when a child is distressed or crying?

* How does the caregiver respond to a normal communication from a child?

* Does the caregiver ask the child questions?

* Does the caregiver speak positively or negatively to the child?

* Is the caregiver warm and responsive to the children?

* Is the caregiver's own emotional state detached or involved?

* Does the caregiver engage in activities that are mentally stimulating for a child, including offering appropriate toys, reading or games?

* Does the caregiver stimulate social development with other children?

"The most important thing in any setting is to go and observe," said developmental psychologist Booth.

"Pay attention to how the caregiver treats the children. Sometimes you can go to a child-care setting that looks safe, with wonderful toys, but you don't see positive caregiving. Parents should trust their feelings."

STARTING DAY CARE

With nearly two-thirds of mothers with children under the age of 6 working outside the home, many children eventually enter day care. About 14 percent of children stay home full-time with their mothers

throughout the first three years. The percentage of children who start day care for 10 or more hours weekly at different ages is:

51% 0 to 3 months

18% 4 to 8 months

5% 9 to 12 months

9% 13 to 24 months

3% 25 to 36 months

14% never

A VARIETY OF CHOICES

Researchers discovered that the type of day-care setting often changes as the child ages.

(This graphic was not available)

* Some children may be home with their mothers at 15 or 36 months, but have been in day care at other times.

SOURCE: National Institute of Child Health and Human Development (NICHD) Study of Early Child Care

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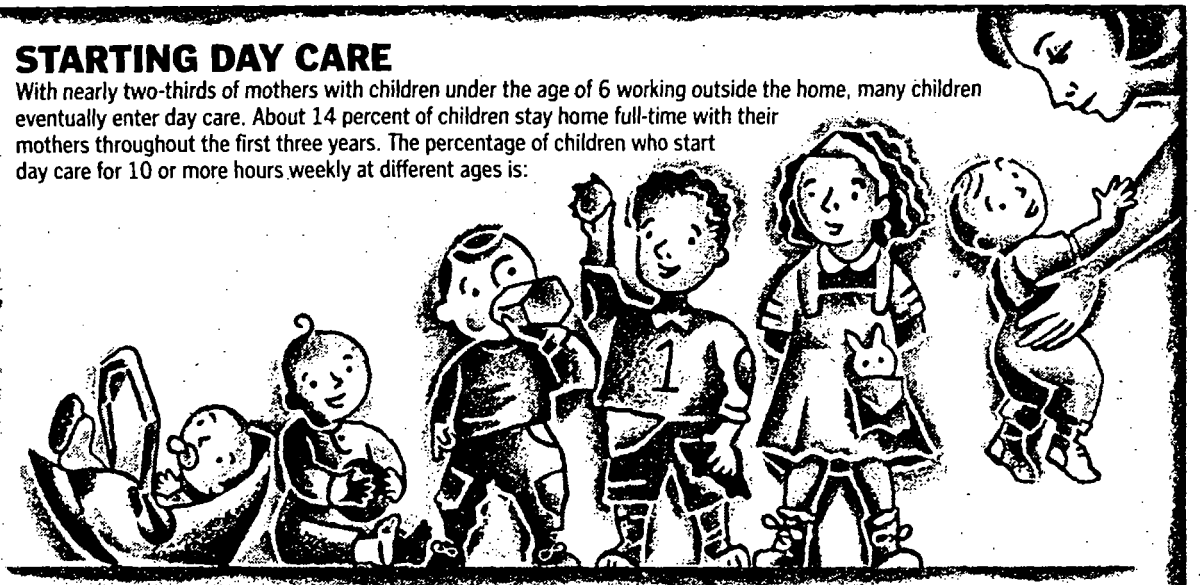

51%	18%	5%	9%	3%	14%
0 TO 3 MONTHS	4 TO 8 MONTHS	9 TO 12 MONTHS	13 TO 24 MONTHS	25 TO 36 MONTHS	NEVER

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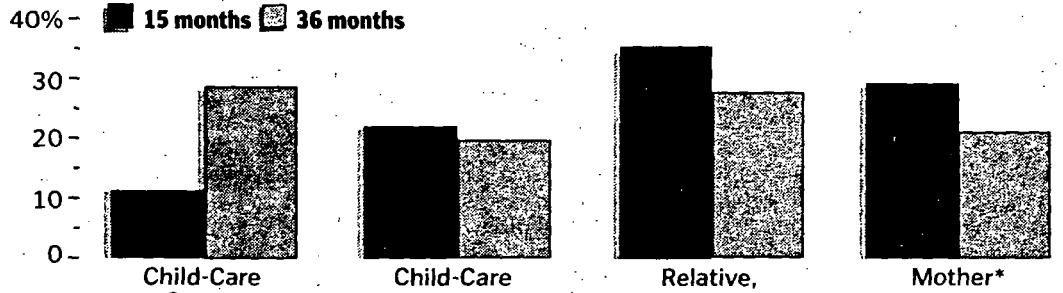

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BY JOEL BOWER FOR THE WASHINGTON POST

United States is 'adequate.' "

— Cathryn L. Booth, University of Washington

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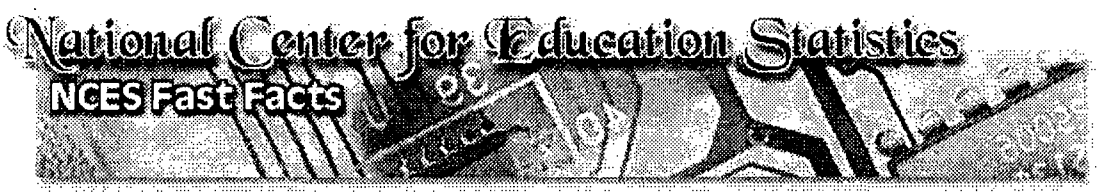
The federal study enrolled families with healthy new-

See CHILD CARE, Page 9



Question: What are the most popular forms of child care?

Response: In 1995 the majority of children, 55 percent, ages three to five were enrolled in a center-based program. Parents cared for 26 percent of children, relatives cared for 19 percent of children and non-relatives cared for 17 percent of children. According to the 1997 *Condition of Education,* black children and white children were more likely to be enrolled in center-based programs than their Hispanic counterparts.

Child Care Arrangements of Preschool Children, by Age and Household Characteristics: 1995, Percent of Children in Non-Parental Arrangements[1]

Characteristics	Relative Care	Non-relative Care	Center-based Program
By Age			
Total	19.4	16.9	55.1
3 years old	21.4	18.5	40.7
4 years old	18.3	15.3	64.7
5 years old	15.1	17.2	74.5
By Race/Ethnicity			
White, non-Hispanic	16.5	19.4	56.9
Black, non-Hispanic	28.6	11.3	59.5
Hispanic	22.8	12.5	37.4
Other	22.6	10.5	56.7

[1] Columns do not add up to total because some children participated in more than one type of nonparental arrangement.

Source: National Center for Education Statistics, U. S. Department of Education, *Digest of Education Statistics,* 1997, Table 49, page 63.

For the complete version of the table, please click here.

Child Care Arrangements of Preschool Children, by Age and Household Characteristics: 1995: Percent of Children in Parental Arrangements

Characteristics	Percent of Children with Parental Care Only
By Age	
Total	25.9
3 years old	32.0
4 years old	22.2
5 years old	16.2
By Race/Ethnicity	
White, non-Hispanic	25.2
Black, non-Hispanic	20.3
Hispanic	38.4
Other	24.2

Source: National Center for Education Statistics, U. S. Department of Education, *Digest of Education Statistics,* 1997, Table 49, page 63.

For the complete version of the table, please click here.

Other Resources:

Characteristics of Children's Early Care and Education Programs: Data from the 1995 National Household Education Survey

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USATODAY HEALTH

03/18/99- Updated 11:28 PM ET

SIDS risk seen in day cares

By Kim Painter, USA TODAY

Babies in day care may face an especially high risk of Sudden Infant Death Syndrome, says a researcher who found double the expected number of day-care SIDS cases in an 11-state study out Friday.

The review of 1,916 SIDS deaths from 1995 to 1997 found that 14% occurred in day-care homes or centers.

"We would have expected about 7%," given the number of infants in day care and hours spent there, says Rachel Moon of Children's National Medical Center in Washington.

Moon will present the data at a meeting in Baltimore of the Association of SIDS and Infant Mortality Programs.

The alarming finding comes as the overall SIDS rate continues a dramatic slide. The drop is linked to a campaign urging all caregivers to put babies to sleep on their backs, not their bellies. Studies show that sleeping on the tummy raises the risk of SIDS, which is defined as the sudden, unexplained death of an infant in the first year of life.

The majority of babies in Moon's study were found on their tummies.

Parents of babies who died on their tummies in day care often said the babies slept on their backs at home.

Moon and other researchers theorize that day care may present a special risk precisely because some babies are switched from back to tummy when away from home, and inexperience in the new position may contribute to their deaths.

"It's only a theory, but it makes sense," Moon says. Babies used to sleeping on their backs may not lift their heads as well to keep noses and mouths clear of bedding, she says.

A 1997 Moon study found that 43% of day-care providers in the Washington area hadn't heard the back-sleeping message.

The "Back to Sleep" campaign, a national public and private initiative , stepped up efforts recently to educate day-care operators, the program's Daisy Whittemore says. She says parents must " communicate with your provider. You just can't assume they know."

Reported U.S. SIDS deaths fell from 4,891 in 1992 to 2,705 in 1997, a drop of 43%. The number of babies sleeping on their stomachs has dropped during the same time, from 70% in 1994 to 21% in 1997, according to the Department of Health and Human Services.

Current Population Reports
Household Economic Studies

My Daddy Takes Care of Me! Fathers as Care Providers

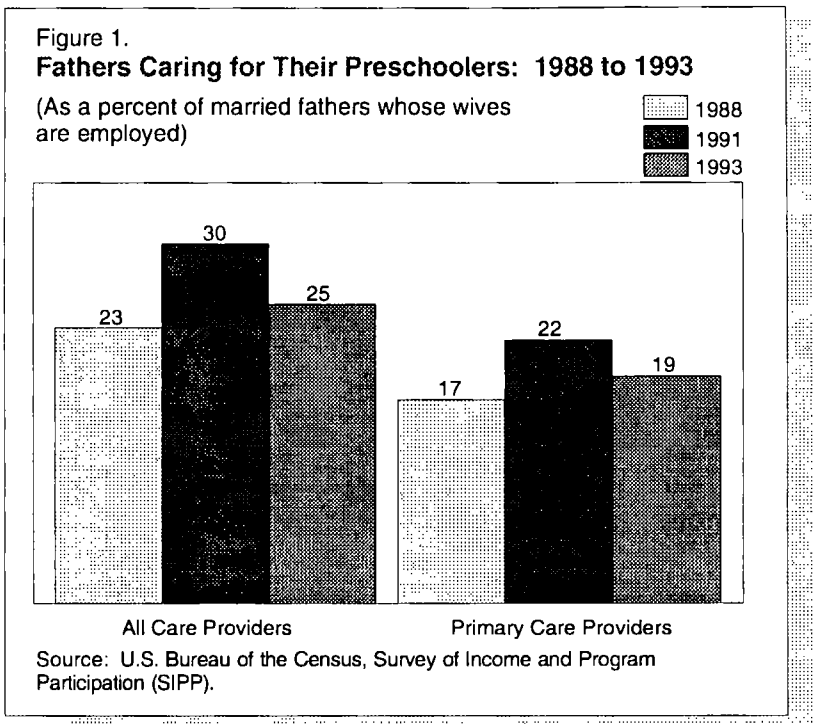
By Lynne M. Casper

CENSUS BUREAU
P70-59
Issued September 1997

Over the past 5 years, there has been increasing interest in the roles fathers play in shaping their children's lives. With renewed emphasis on family values in the public policy debate about the well-being of families, fathers' roles in child-rearing have been launched into the spotlight. It is undisputed among researchers and policy pundits alike that fathers' involvement is extremely important for children's proper social and emotional development. Furthermore, fathers interact differently with their children than do mothers, and it is fathers' unique interaction that is said to help promote specifically children's emotional development.[1]

The increasing interest in fathers' involvement has been mirrored in the media, with reporters covering stories on a wide array of father-related topics. Articles have been written on diverse topics ranging from stay-at-home dads to fathers as child care providers, to fathers seeking custody of their children. In addition, several fathers' organizations have been formed to provide support to fathers as they take on an increasing number of the challenges associated with child-rearing. But what do we mean by fathers' involvement? Researchers distinguished several types of fathers' involvement at the 1996 National Institutes of Health's Family and Child Well-Being Network's Conference on Father Involvement. One of the most influential series of studies which was frequently referred to at this conference suggested three types of involvement: interaction, availability, and responsibility.[2] In this report, we look at one aspect of fathers' involvement — fathers caring for their children during mothers' working hours — and examine which types of fathers are the most likely to take care of their children.[3] It should be noted that care by fathers, as examined in this report, taps, to some extent, all three of the components of fathers' involvement.

Figure 1.
Fathers Caring for Their Preschoolers: 1988 to 1993



Source: U.S. Bureau of the Census, Survey of Income and Program Participation (SIPP).

One in four fathers take care of their preschoolers during the time mothers are working

According to the Survey of Income and Program Participation (SIPP), in the fall of 1993, 14.8 million fathers were in married-couple families with children aged 0 to 14 whose mothers were employed (table 1). Of these fathers, 2.9 million, or 1 in 5, provided care for at least one child under age 15 while the child's mother was working. In this same year, about 1.9 million or 13 percent of fathers were the primary care provider — they provided care for their children during more of the mother's working hours than did any other single care provider.

Fathers are more likely to care for their preschool-age children than for their gradeschool-age

[1] Parke, R.D. 1990. "In Search of Fathers: A Narrative of an Empirical Journey." In *Methods of Family Research, Volume 1.* I. Sigel and G. Brody, eds. Hillsdale, NJ: Erlbaum.

[2] Lamb, M.E., J.H. Pleck, E.L. Charnov, and J.A. Levine. 1987. "A Biosocial Perspective on Paternal Behavior and Involvement. In *Parenting Across the Lifespan: Biosocial Dimensions.* J.B. Lancaster, J. Altman, A.S. Rossi, and L.R. Sherrod, eds. New York: Aldine de Gruyter.

[3] In this report, we use the term "working" to refer to mothers who are working for pay, whether at home or away from home; we do not mean to infer that homemaking activities do not constitute work.

children. In the fall of 1993, there were 6.3 million married fathers of preschoolers whose mothers were employed. Of these fathers, 1.6 million or 1 in 4 were taking care of their preschoolers while the mothers were at work. In contrast, while there were 11.4 million fathers of gradeschool-age children, only 16 percent (1.8 million) were taking care of their gradeschoolers.[4] Fathers of preschoolers were also more likely to be primary care providers. Almost 1 in 5 fathers were primary care providers for preschoolers compared with fewer than 1 in 10 for gradeschoolers.

Because young children require constant attention and care, the fact that more fathers care for their preschoolers than for their gradeschoolers may at first appear surprising. However, there are many reasons why one might expect fathers to be more likely to take care of younger children. First, preschool-aged children are much more likely than older children to require supervision while their mothers are away at work simply because during the school year, older children are more likely to be in school all day. In addition, because the early years in a child's life are generally regarded as the most formative, parents may be more willing to juggle their work schedules to arrange for parental care, resulting in more fathers caring for younger children. Another reason may be that fathers who have older children are more likely to be older and to have higher earnings with which to purchase alternative care services. In addition, parents may be more willing to allow older children to care for themselves because they are more mature and better equipped to handle the situations that may arise.

Table 1.

Fathers Providing Care for Children While Mothers Are Working: 1988 to 1993

(Numbers in thousands)

Fathers providing care	1993		1991		1988	
	Number	Percent	Number	Percent	Number	Percent
Caring for Children 0-14						
Total number of fathers [1]	14,849	100.0	14,620	100.0	14,278	100.0
Providing some care	2,914	19.6	3,331	22.8	2,698	18.9
Primary provider of care	1,915	12.9	2,032	13.9	1,688	11.8
Caring for Children Under 5						
Total number of fathers	6,274	100.0	6,274	100.0	6,536	100.0
Providing some care	1,554	24.8	1,901	30.3	1,523	23.3
Primary provider of care	1,164	18.5	1,407	22.4	1,107	16.9
Caring for Children 5-14						
Total number of fathers	11,412	100.0	11,256	100.0	10,720	100.0
Providing some care	1,780	15.6	1,975	17.5	1,660	15.5
Primary provider of care	1,034	9.1	1,015	9.0	941	8.8

[1]The number of fathers of children under 5 combined with the number of fathers of children 5-14 does not sum to the total number of fathers of children 0-14 because some fathers have children in both age groups.

Note: Limited to married fathers whose wives are employed.

The proportion of fathers caring for their preschoolers has shifted dramatically over the past few years

Noteworthy changes have recently occurred in the proportions of married fathers who care for their preschoolers while their mothers are at work.[5] Among married-couple families with preschool-age children, the proportion of fathers who acted as child care providers during their wives' working hours sharply increased from 23 percent in 1988 to 30 percent in 1991 (figure 1). However, by 1993, the proportion of fathers providing care fell back down to 25 percent. In terms of numbers, there were 1.5 million fathers caring for their preschoolers in 1988, rising to 1.9 million in 1991, but falling back down to 1.6 million by 1993 (table 1).

Because fathers are so much more likely to care for their preschoolers and because our data are better suited to analyzing care for preschoolers, in the remainder of this report, we focus on married fathers with children under 5 whose mothers are employed.

The proportions of fathers providing primary care changed in a similar fashion over this same time period. The proportion of fathers who were primary care providers increased from 17 percent in 1988 to 22 percent in 1991, representing a 30 percent increase over the 3 year period. By 1993, however, this proportion had fallen back down to 19 percent. In 1988 and 1993, this translates into about 1.1 million fathers providing primary care for their preschoolers, compared with 1.4 million in 1991.

The increase in care by fathers between 1988 and 1991 may have been a response to the economic recession which occurred during the same period (the recession began in July 1990 and reached its lowest point in March 1991). Increases in the proportions of people who were not employed and working at part-time jobs may have meant that more fathers were available to serve as child care providers.[6] The increase in care by fathers may have also reflected the desire of parents to cut down on child

[4] Part of the apparent drop for school-age children compared with preschoolers results from the way the data are collected. Currently in the SIPP, we ask parents to list up to two arrangements they use to care for their children while the mother is working. School is included as one possible response. Since many gradeschoolers are in school while their mothers are working, the majority of parents report school as their primary care arrangement. Therefore, the probability that the father will be mentioned as a primary care provider declines substantially simply because of the way the child care questions are asked.

[5] Data are shown for 1988 and 1991 because of the desire to depict child care arrangements used by families in a recent recession (1991) as opposed to adjacent nonrecession years (1988 and 1991). Data for 1989, 1990, and 1992 are not available for analysis.

[6] For more information about employment patterns during the recession see U.S. Bureau of the Census. 1995. *Income and Job Mobility in the Early 1990's*, SB/95-1. U.S. Bureau of the Census:Washington, DC.

care costs by switching to more parental supervision of their children whenever possible. That the decline in care by fathers between 1991 and 1993 occurred at the same time as the economy was expanding also supports this notion.

To further investigate the possibility that the proportion of fathers providing care for their children may have been driven largely by the economy and the attendant economic circumstances of families with young children, we turn now to examining how a married father's employment status and work schedule are related to whether or not he cares for his children. We also look at whether there were changes in the levels of fathers' employment from 1988 to 1993 which could account for the change in care by fathers over the same period.

Fathers who don't work and those whose jobs are at night or part time are more likely to care for their preschoolers

A married father's employment status makes a big difference in whether or not he provides care for his preschool-age children — those who are not employed are much more likely to be providing care. For example, in 1993, 58 percent of fathers who were not employed provided care for their preschoolers during their wives' working hours compared with only 23 percent of fathers who were employed (table 2). Nonemployed fathers — those who were either unemployed or not in the labor force — were also much more likely to be primary care providers than employed fathers (50 percent compared with 16 percent).[7]

The amount of time a father works determines in part his availability to take care of his preschoolers while their mother is at work. Married fathers who work part time are much more likely to take care of their preschoolers than are fathers who work full time — 32 percent of fathers compared with only 22 percent in 1993. In addition, married fathers working part time in 1993 were twice as likely to be primary providers for their preschoolers as fathers working full time.

The type of shift a father works is also an important factor. In 1993, married fathers who worked evening or night shifts were twice as likely to take care of the preschoolers during their mothers working hours as fathers who worked day shifts (34 percent compared with 18 percent).[8] Nonday shift fathers were also twice as likely to be primary care providers as day shift fathers (26 percent compared with 13 percent).

The economy can have a large impact on the availability of fathers for care as well as on the likelihood of fathers providing care

We have seen that in 1993, married fathers who were not employed and those who worked part time or nonday shifts were more likely to take care of their preschoolers. But are these patterns the same over time, and have fathers in the same employment status been equally as likely

[7] There is no significant difference between the 58 percent of nonemployed fathers providing any care and the 50 percent providing primary care.

[8] Day shift in this report is defined as a work schedule where at least one-half of the hours worked daily were between 8:00 a.m. and 4:00 p.m. All other schedules in which the majority of hours are worked outside of this period or which have irregular or rotating hours are classified as nonday work shifts.

Table 2.

Fathers Providing Care for Preschoolers While Mothers Are Working, by Employment Status of Fathers: 1988 to 1993

(Numbers in thousands)

Employment status of father	1993			1991			1988		
	Total	Number of providers	Percent providing	Total	Number of providers	Percent providing	Total	Number of providers	Percent providing
All Providers	6,274	1,554	24.8	6,274	1,901	30.3	6,536	1,523	23.3
Employment Status									
Not employed [1]	412	238	57.6	487	312	64.1	293	167	56.9
Employed [2]	5,862	1,316	22.5	5,788	1,589	27.5	6,242	1,356	21.7
Full time	5,428	1,176	21.7	5,217	1,378	26.4	5,887	1,260	21.4
Part time	434	141	32.3	571	211	37.0	355	96	26.9
Type of Work Shift [3]									
Day shift	4,275	784	18.3	3,981	932	23.4	4,492	842	18.7
Nonday shift	1,586	533	33.6	1,807	657	36.4	1,751	514	29.4
Primary Care Providers	6,274	1,164	18.5	6,274	1,407	22.4	6,536	1,107	16.9
Employment Status									
Not employed [1]	412	207	50.2	487	257	52.8	293	136	46.5
Employed [2]	5,862	957	16.3	5,788	1,150	19.9	6,242	971	15.6
Full time	5,428	838	15.4	5,217	995	19.1	5,887	898	15.3
Part time	434	119	27.4	571	155	27.1	355	72	20.4
Type of Work Shift [3]									
Day shift	4,275	549	12.8	3,981	644	16.2	4,492	580	12.9
Nonday shift	1,586	408	25.7	1,807	505	28.0	1,751	391	22.3

[1] Includes persons who were unemployed, enrolled in school, or not in the labor force the month prior to the survey.
[2] In the month prior to the survey.
[3] For fathers who were employed in the month prior to the survey.
Note: Limited to married fathers whose wives are employed.

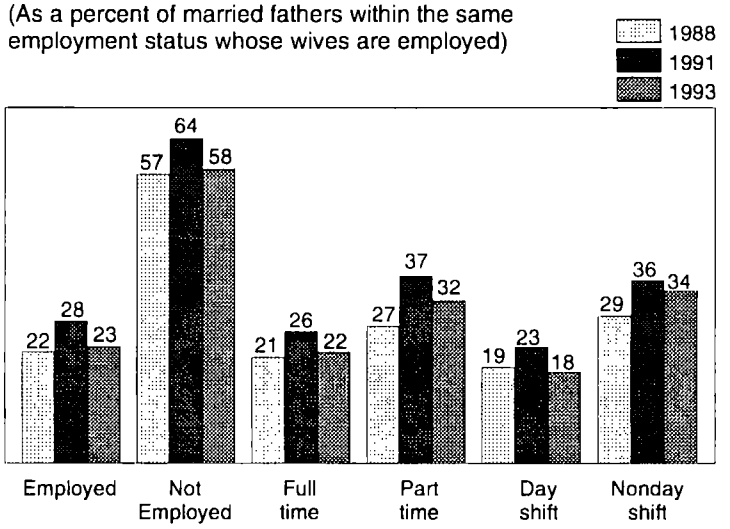
to care for their preschool-aged children over time? The answer to the first question is "yes: fathers who are not employed, those working part time, and those working nonday shifts were consistently more likely to be caring for their children in 1988, 1991, and 1993 (figure 2).[9] In other words, regardless of the prevailing economic conditions of the time, fathers who are in what might be considered the more "nontraditional" employment statuses are more likely to take care of their preschoolers when compared to those in the more "traditional" employment statuses.[10]

The answer to the second question is not so clear-cut. Within the same **traditional** employment status the answer is "no": the proportion of married fathers providing care for their preschoolers was higher in the recession year of 1991 than in either of the nonrecession years — 1988 or 1993. However, within the same **nontraditional** status the answer is "yes": in general, fathers were no more likely to take care of their preschoolers in 1991 than in 1988 or 1993.

Changes in the economy can affect whether or not a father will take care of his children in several ways. If a father is unemployed or underemployed, he will have more "free" time available to care for his children. Also, an economic downturn can mean that even if a father is employed full time, the family may have fewer economic resources with which to purchase alternative child care services. When money is scarce, families are less likely to pay for child care and more likely to rely on relatives including fathers to take care of their children.

Figure 2.
Fathers Providing Care for Their Preschoolers, by Father's Employment Status: 1988 to 1993

(As a percent of married fathers within the same employment status whose wives are employed)



Source: U.S. Bureau of the Census, Survey of Income and Program Participation (SIPP).

During the recession year of 1991, fully 17 percent of married fathers were not employed or were working part time (figure 3). In contrast, only 10 percent and 14 percent of fathers were in these circumstances in 1988 and 1993 respectively. Moreover, the more time a father has available — the greater the number of hours the father is **not** working while the mother is — the more likely he is to be taking care of his preschoolers.[11] For example, in 1993, only 13 percent of fathers who have less than 5 available hours per week take care of their children, compared with 50 percent of fathers who have 20 or more available hours per week (figure 4). This pattern is basically the same for all 3 years, but within each availability category, in general, fathers were more likely to care for their children in 1991 than in 1988 or 1993.[12] This trend could reflect the desire for families to reduce child care expenditures during poorer economic times. Thus, these comparisons across years show that not only were more fathers available for care in the recession (figure 3), but they were also more likely to provide care (figure 4).

The fact that care by fathers declined between 1991 and 1993 indicates that the large increase which occurred between 1988 and 1991 may not have been part of changing social trends, but rather was probably motivated by the shifting economy. This fact does not imply that fathers became less interested in their children's

[9] The one exception is that in 1988 fathers who were employed part time were no more likely than those employed full time to care for their children.

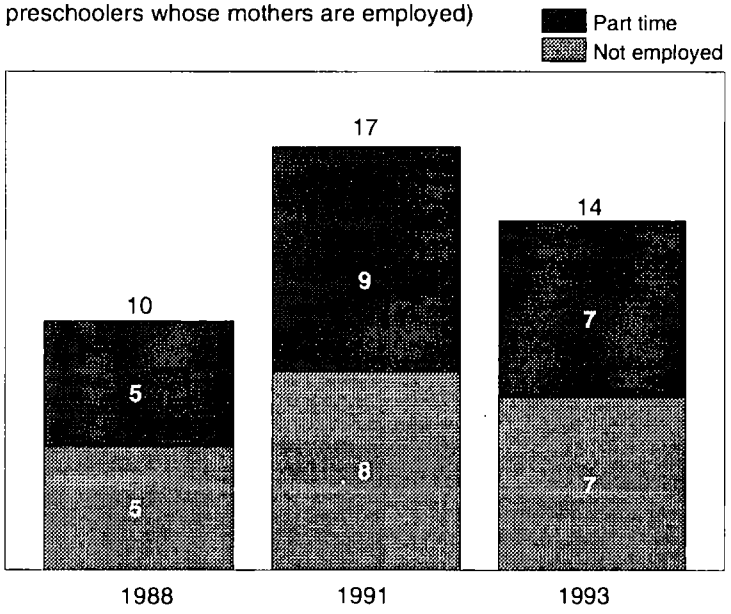
[10] People working nontraditional employment statuses in this report are defined as those who work part time or nonday shifts, while people working traditional employment statuses are those working full time or in day shifts.

[11] This measure includes fathers who are nonemployed and assumes that they are available to care for their children for the entire time the mothers are working. The number of hours a nonemployed father is available to care for his children then, is equal to the number of hours the mother works.

[12] Exceptions are the 5 to 9 hour category where fathers are no more likely to care for their preschoolers in 1991 than in 1988 or 1993, and the 20+ category where fathers are no more likely to care for their preschoolers in 1993 than in 1991.

Figure 3.
Fathers Who Worked Part Time or Were Not Employed: 1988 to 1993

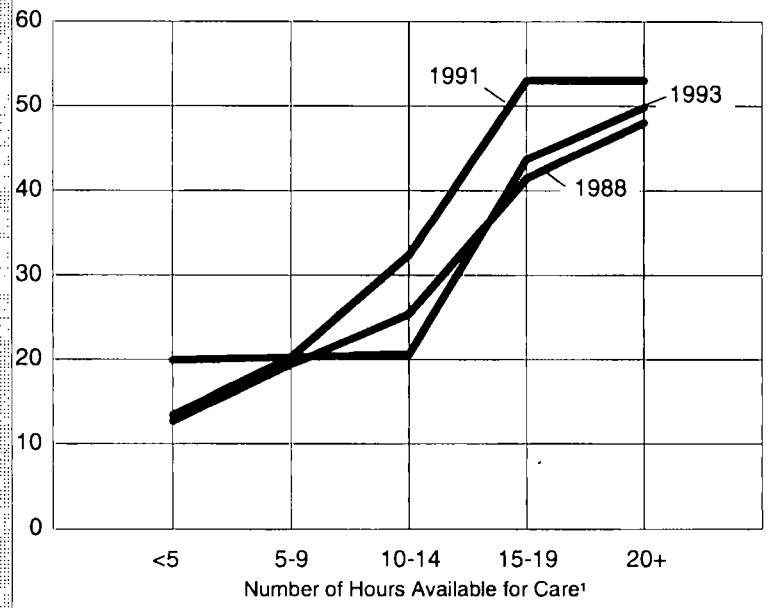
(As a percent of married fathers with preschoolers whose mothers are employed)



Source: U.S. Bureau of the Census, Survey of Income and Program Participation (SIPP).

Figure 4.
Fathers Caring for Their Preschoolers, by Hours Available for Care: 1988 to 1993

(As a percent of married fathers within the same availability status whose wives are employed)



[1]The number of hours fathers were not at work during the time their wives were at work.

Source: U.S. Bureau of the Census, Survey of Income and Program Participation (SIPP).

well-being between 1991 and 1993; some families may believe that the most valuable and productive role a father can play is to provide food and shelter. As the economy improved and more fathers became fully employed, their availability for care decreased, while their incomes and ability to pay for child care increased.

Care by fathers is most common in poor families

Child care costs constitute an especially large proportion of a poor family's budget, so it comes as no surprise that fathers in poor families are more likely to take care of their children than fathers in nonpoor families — 43 percent compared with 24 percent in 1993, for example (figure 5).[13] This pattern also occurred in 1988 and 1991.[14] Moreover, in all 3 years, poor fathers were twice as likely as nonpoor fathers to be primary care providers during the time the mothers were at work. Note, however, that the percentage of nonpoor fathers who were primary providers was much higher in 1991 than in either 1988 or 1993.

Examining care by fathers as it relates to family income yields a similar picture: fathers in families with lower incomes are more likely to care for their children than fathers in families with higher incomes. In 1993 for example, 45 percent of fathers with monthly family incomes of less than $1,500 were caring for their preschoolers, compared with only 30 percent for those with incomes between $1,500 and $2,999 and 26 percent for those with incomes between $3,000 and $4,499.[15] Fathers with monthly family incomes of $4,500 or more were the

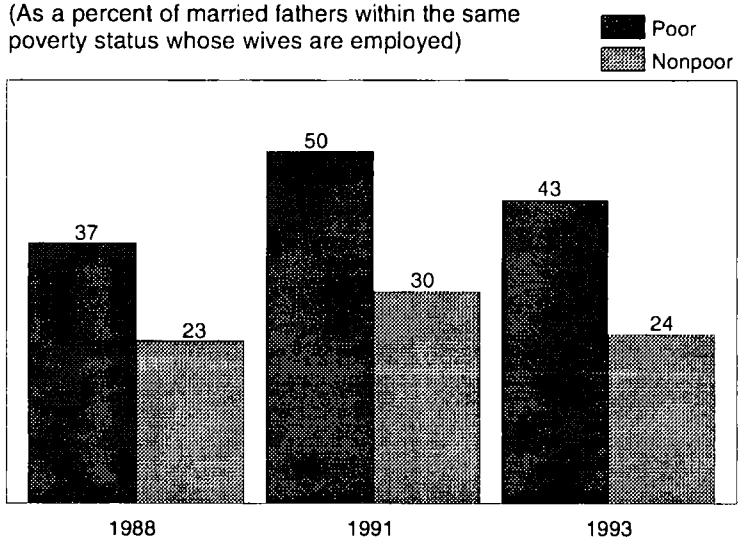
[13] For more information about child care costs see Casper, Lynne M. 1995. *What Does It Cost to Mind Our Preschoolers?* P70-52. U.S. Bureau of the Census: Washington, DC.

[14] Poverty and income figures are in current dollars; data are not directly comparable across years.

[15] Note that there is no significant difference between the 30 percent and 26 percent of fathers in the middle income categories who care for their children.

Figure 5.
Fathers Caring for Their Preschoolers by Poverty Status: 1988 to 1993

(As a percent of married fathers within the same poverty status whose wives are employed)



Source: U.S. Bureau of the Census, Survey of Income and Program Participation (SIPP).

least likely to provide care, with only 16 percent doing so. In both 1988 and 1991 fathers with the highest family incomes were also the least likely to be caring for their preschoolers while the mothers were working. In addition, fathers with the highest incomes were the least likely to be primary care providers; 10 percent of these fathers were primary care providers in all three years.

Like fathers in poor families, those in families receiving AFDC, WIC, food stamps, or general assistance were more likely to be caring for their preschoolers while the mothers were at work. In 1993, 1 in 3 fathers whose families received benefits were taking care of their preschoolers compared with only 1 in 4 fathers whose families were nonrecipients. Fathers in recipient families were also much more likely to be primary care providers for their children while their mothers were working (26 percent compared with 18 percent).

Fathers in service occupations are more likely than fathers in other occupations to provide care for their preschoolers while their mothers are at work

Fathers who work in service occupations such as maintenance, police, fire fighting, and security positions are about twice as likely as fathers in any other occupation to be taking care of the preschoolers while the mothers are working. For example, in 1993, 42 percent of fathers in service occupations cared for their preschool-age children compared with about 20 percent of fathers who were in managerial/professional or technical/sales occupations (table 3). Data for 1991 also support this same pattern. Note that fathers in service occupations were also more likely than fathers in other occupations to be primary care providers for the preschoolers while the mothers were working in both 1991 and 1993.

Both patterns may be due to the fact that fathers in service occupations are more likely to work nontraditional schedules than other fathers and therefore, may be more likely to be available for care. In 1993, for example, 13 percent of fathers in service occupations worked part time compared with about 7 percent of fathers in other occupations. Fathers in service occupations were also at least twice as likely as other fathers to work nonday shifts.

Veteran status makes a difference in whether or not a father cares for his preschoolers

Fathers who had served in the armed forces were more likely to care for their children and to be primary care providers than fathers who did not serve. In 1993, for example, 30 percent of fathers who were veterans took care of the children while their mothers were working compared with only 24 percent of fathers who were not veterans.[16] But, why are nonvets less likely to care for their preschoolers? Fathers who are nonveterans are more likely to be in managerial or professional occupations and to have higher family incomes; fathers with these characteristics are less likely to be caring for their preschoolers.

Care by fathers is the most common in the Northeast and least common in the South

Care by fathers is more common in some areas of the country than in others. In 1993, fathers in the Northeast were the most likely to be taking care of their children and to be providing primary care, while those in the South were the least likely to be doing so. About 33 percent of fathers in the Northeast provided care for their preschoolers during their mothers working hours, compared with 27 percent of fathers in the Midwest and West and only 18 percent in the South. Care by fathers was especially prevalent in New England where 4 out of 10 fathers cared for their children in 1993 (figure 6).[17] Note that fathers

[16] Veteran status data were not tabulated for 1988.
[17] There is no significant difference between the proportions of preschoolers cared for by their fathers in New England compared with the Mountain states.

Table 3.

Fathers Providing Care for Preschoolers While Mothers Are Working, by Various Characteristics: 1988 to 1993

(Numbers in thousands)

Characteristics	1993			1991			1988		
	Number of fathers	Percent providing care		Number of fathers	Percent providing care		Number of fathers	Percent providing care	
		All providers	Primary providers		All providers	Primary providers		All providers	Primary providers
All fathers	6,274	24.8	18.5	6,274	30.3	22.4	6,536	23.3	16.9
Race and Hispanic origin:									
White, not Hispanic	4,908	24.9	18.6	4,948	31.0	22.6	5,184	24.3	18.3
Black, not Hispanic	475	23.4	16.1	491	24.9	22.1	630	19.2	13.1
Hispanic origin	610	27.2	21.2	521	38.8	28.0	501	21.2	10.7
Other	281	19.8	16.3	314	13.4	11.5	221	15.3	9.9
Father's occupation									
Manager/professional	1,619	18.1	12.9	1,595	23.4	16.4	NA	NA	NA
Technical/sales	1,189	20.1	15.0	1,214	26.9	19.0	NA	NA	NA
Service	508	42.1	29.0	438	47.3	35.5	NA	NA	NA
Other	2,547	22.4	16.6	2,542	26.8	19.7	NA	NA	NA
Not employed last month	412	57.6	50.2	487	64.1	52.8	NA	NA	NA
Father's veteran status									
Veteran	1,044	29.7	22.4	1,092	35.1	27.1	NA	NA	NA
Not a veteran	5,230	23.8	17.8	5,183	29.3	21.4	NA	NA	NA
Region:									
Northeast	1,129	32.5	27.3	1,316	36.5	28.1	1,117	33.9	27.1
Midwest	1,778	26.7	18.6	1,692	30.9	23.5	1,813	25.1	17.5
South	2,094	17.8	13.1	1,883	21.3	17.6	2,322	19.0	13.7
West	1,274	26.7	19.8	1,384	35.9	22.3	1,284	19.3	13.1
Division:									
New England	363	38.5	31.5	440	47.3	36.8	366	41.3	32.1
Middle Atlantic	766	29.6	25.3	876	31.1	23.7	751	30.3	24.7
East North Central	1,210	27.7	19.2	1,004	30.7	23.7	1,042	27.3	19.9
West North Central	568	24.5	17.3	687	31.3	23.3	771	22.1	14.2
South Atlantic	1,130	17.4	11.9	977	23.6	19.9	1,165	18.7	13.6
East South Central	369	18.5	12.4	303	15.2	12.6	390	18.4	11.7
West South Central	594	18.2	15.7	604	20.6	16.3	768	19.8	15.0
Mountain	308	36.0	20.7	310	40.9	18.0	326	22.7	16.0
Pacific	966	23.7	19.5	1,074	34.4	23.5	958	18.1	12.1
Metropolitan residence:									
Central city	1,599	28.2	23.1	1,596	35.3	27.6	1,781	23.1	18.0
Suburb	3,286	22.2	16.4	3,192	27.8	20.4	3,060	23.7	16.8
Nonmetropolitan	1,390	26.9	18.3	1,487	30.4	21.3	1,695	22.8•	16.1
Number of children under 5:									
One	4,929	22.5	16.3	4,868	27.7	20.4	5,124	21.8	15.7
Two or more	1,346	33.1	26.7	1,407	39.2	29.6	1,411	28.6	21.3
Age of father:									
Less than 25 years	402	32.9	25.6	426	31.8	20.7	447	23.2	17.3
25 to 34 years	3,347	24.2	18.2	3,433	30.1	21.4	3,941	24.6	17.4
35 years and over	2,526	24.2	17.9	2,416	30.4	24.2	2,147	20.9	15.9
Poverty status[1]:									
Below poverty	286	43.0	36.6	273	49.6	42.1	314	36.9	30.4
Above poverty	5,975	23.9	17.7	5,965	29.5	21.5	6,220	22.6	16.3
Family's monthly income[1]:									
Less than $1,500	407	45.3	40.3	470	39.1	30.6	622	35.6	30.6
$1,500 to $2,999	1,760	30.0	24.9	2,082	37.4	29.4	2,565	26.8	19.3
$3,000 to $4,499	1,856	26.0	18.3	1,910	30.1	22.0	1,985	21.3	14.7
$4,500 and over	2,238	16.1	9.9	1,776	20.0	12.6	1,363	14.0	9.7
Husband's monthly income[2]:									
Less than $1,500	1,619	30.1	25.1	1,930	37.0	29.4	2,060	26.3	19.9
$1,500 to $2,999	2,706	24.6	17.5	2,665	30.9	21.7	3,061	22.6	15.6
$3,000 to $4,499	1,182	19.7	13.1	985	24.8	17.9	883	20.4	13.4
$4,500 and over	651	15.7	10.3	559	12.4	7.5	434	12.6	11.0
Program participation:									
Recipient[3]	432	32.0	26.1	NA	NA	NA	NA	NA	NA
Nonrecipient	5,842	24.2	18.0	NA	NA	NA	NA	NA	NA

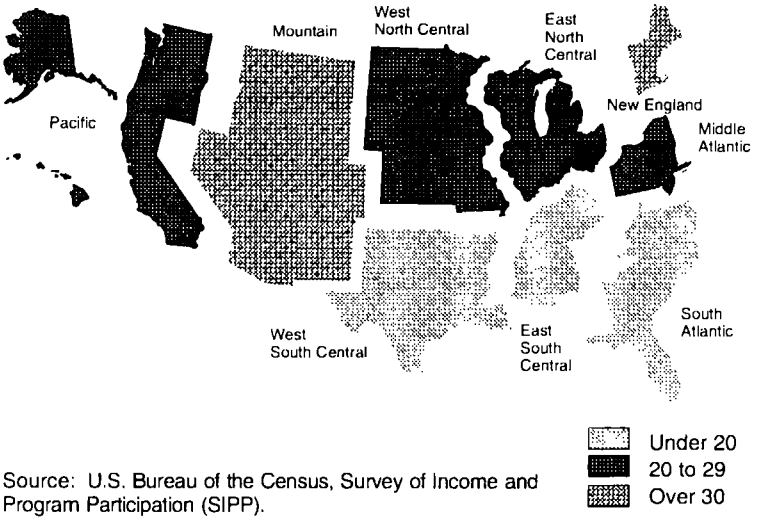
NA Data not tabulated for this year.
[1]Omits fathers with no family income. Income in current dollars.
[2]Omits fathers with no income. Income in current dollars.
[3]Receives AFDC, WIC, food stamps, or general assistance.
Note: Limited to married fathers whose wives are employed.

residing in the Northeast were the most likely to be primary providers in 1988 as well.

Geographical differences in the frequency of fathers caring for their children may relate to regional variations in employment rates, and in costs of child care and amounts of family income available to purchase alternative child care services. In fact, we have found that child care costs are indeed more expensive in the Northeast than in either the Midwest or the South.[18] Similarly, in 1993 for example, fathers were more likely to be nonemployed in the Northeast than in the Midwest or the South. It could also be that child care facilities may be farther away in some areas than in others; this might cause more people to choose neighbors and relatives (including fathers) over child care facilities that may be less accessible.

Figure 6.
Fathers Providing Care for Their Preschoolers, in Different Divisions of the Country: 1993

(As a percent of married fathers whose wives are employed)



Source: U.S. Bureau of the Census, Survey of Income and Program Participation (SIPP).

Care by fathers is the least common in the suburbs

In 1993, fathers in the suburbs were the least likely to care for their preschoolers when compared with fathers residing in the central cities and those in nonmetropolitan areas — 22 percent of suburban fathers compared with 27 percent of the other two groups. One reason for this pattern is that fathers living in suburban areas are more likely to have higher incomes and be better able to purchase alternative care services.

Fathers with two or more preschoolers are especially likely to take care of their preschoolers while their mothers are working

The number of preschoolers a father has helps to determine whether or not he takes care of them, perhaps because of the greater expense of hiring care for more than one preschooler. In 1993, 1 in 3 fathers cared for their preschoolers if they had two or more of them, compared with only about 1 in 5 fathers if they only had one preschooler at home. This pattern is similar for 1988 and 1991. Moreover, fathers with more than one preschooler were also more likely to be primary care providers for their children while the mother was at work, for all 3 years.

Source of the Data

The estimates in this report come from the Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal survey conducted at 4 month intervals by the Census Bureau. Although the main focus of SIPP is information on labor force participation, jobs, income, and participation in federal assistance programs, information on other topics is also collected in topical modules on a rotating basis. Data shown in this report refer to the fall of 1988, 1991, and 1993.

Accuracy of the Estimates

All statistics are subject to sampling error, as well as nonsampling error such as survey design flaws, respondent classification and reporting errors, data processing mistakes, and undercoverage. The Census Bureau has taken steps to minimize errors in the form of quality control and edit procedures to reduce errors made by respondents, coders, and interviewers. Ratio estimation to independent age-race-sex population controls partially corrects for bias because of survey undercoverage. However, biases exist in the estimates when missed persons have characteristics different from those of interviewed persons in the same age-race-sex group.

Analytical statements in this report have been tested and meet statistical standards. However, because of methodological differences, use caution when comparing these data with data from other sources. Contact Lieu Galvin, Demographic Statistical Methods Division, at 301-457-4209 or on the Internet at lgalvin@census.gov for information on the source of data, the accuracy of estimates, the use of standard errors, and the computation of standard errors for estimates in this publication.

More Information

A detailed table package showing the characteristics of fathers taking care of their preschool-age

[18] L. M. Casper, 1995, op. cit.

and gradeschool-age children in 1988, 1991, and 1993 is available on floppy disk for $20 (PE-51) or on paper for $24 (PPL-53) from the Population Division's Statistical Information Office (301-457-2422). The table package is also available on the Internet (http://www.census.gov); search for child care data by clicking on the "Subjects A-Z" button and selecting "child care" under "C". Information about child care costs is available in the report *What Does It Cost to Mind Our Preschoolers?* (P70-52). In addition, information about child care arrangements is available in *Who's Minding Our Preschoolers?* (P70-53). To order copies of either of these reports, contact the Statistical Information Office.

Upcoming Reports

An updated version of the report *Who's Minding Our Preschoolers?* (P70-53) using 1994 SIPP data will be available in the near future.

Contacts

Statistical Information Staff—
pop@census.gov
301-457-2422

Child care issues—
Lynne Casper, Ph.D.
lcasper@census.gov
301-457-2416

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Low-Income Child Care Project Kith and Kin Project Child Care Research Partnership

GAO and NCCP Assess Child Care Supply in Low-Income Communities

Recent studies by NCCP and the U.S. General Accounting Office (GAO) both assess regulated child care supply using data from child care resource and referral agencies (CCR&R) in multiple communities, but the findings and methodology differ.

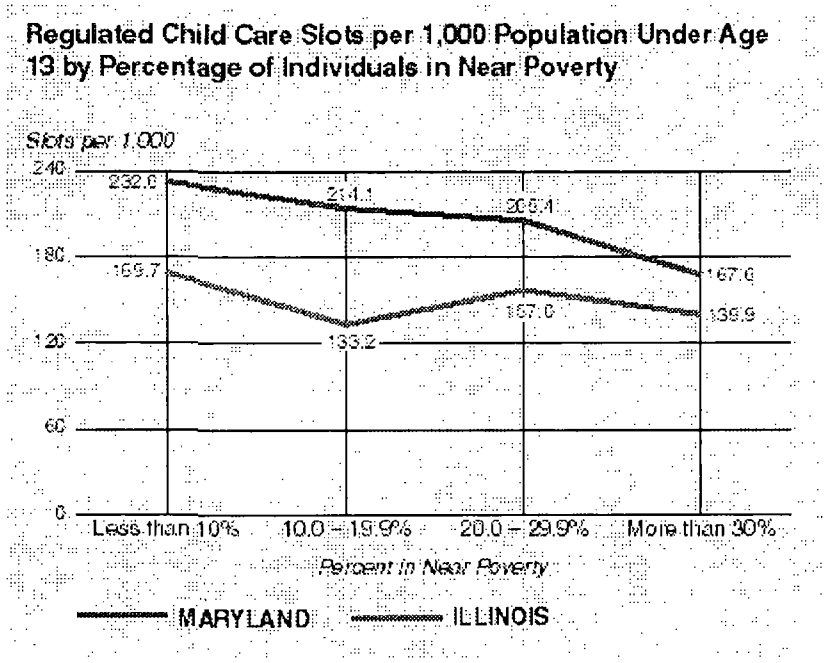
The GAO study, *Welfare Reform: Implications of Increased Work Participation for Child Care*, examinedsthe child care implications of increased work activities spurred by recent federal welfare legislation, which requires up to 50 percent of the public assistance caseload to work by the year 2002. Using CCR&R data, 1990 census data, and 1995 Current Population Survey (CPS) data, the GAO examined child care supply and demand in four areas: Baltimore, Maryland; Chicago, Illinois; and Benton and Lane Counties, Oregon. The study divided census tracts in these areas into poor and nonpoor categories based on whether median household income was above or below $27,750. It then estimated child care capacity (number of slots) for different age groups, developed estimates of demand, and projected the impact of different work requirements from the federal legislation (25, 35, and 50 percent of the public assistance caseload working) if the utilization patterns remained the same as they were in 1995, and if supply remained stable at the 1996 level.

NCCP's *A Study of Regulated Child Care Supply in Illinois and Maryland* is the first of a series of research efforts of the NCCP Child Care Research Partnership, one of three partnerships funded by the Child Care Bureau of the U.S. Department of Health and Human Services, Administration for Children and Families. The study investigated the patterns of regulated child care within and between Maryland and Illinois. It used CCR&R data for each entire state, instead of selected areas, and linked it with census data. Research partners divided zip codes, rather than census tracts, into four groups by level of labor force participation for women with children under age six, and by the percent of individuals in near poverty--in families with incomes below 185 percent of the poverty line; the patterns of supply and price between these different groups of communities were then examined. The analysis was based on the proportion of children under age 13 in each zip code, as that is the cut off age for most child care subsidies.

The GAO report shows great local variation in the supply of regulated child care. It found that the percentage of demand that could be met by known supply ranged from 36 to 144 percent, depending on the age group and the community. For the most part, researchers found that regulated care is less available in poor areas than nonpoor areas. When the new welfare law requires 50 percent of public assistance caseloads to work, the GAO projected a substantial shortfall in available care in poor areas. The GAO also found negligible differences in price between poor and nonpoor areas.

The NCCP report also shows significant variation in local supply between and within Illinois and Maryland. It found less regulated capacity in areas with higher percentages of individuals living in near poverty; but, the relationship between regulated supply and levels of near poverty did not appear to be straightforward in Illinois. (See figure below.) The research partners decided not to estimate the total capacity by age because child care supply can be fluid, especially in family child

care.



NCCP found a significant variation in price by community levels of near poverty. For instance, those communities with more low-income individuals had lower median child care prices for infants--45 percent lower in Illinois and 25 percent lower in Maryland.

One explanation for the difference in findings about price is that NCCP examined all regulated child care in both states as opposed to the smaller sample used by the GAO. NCCP's analysis also used prices for all child care available in a community, not distinguishing between family child care and center-based care.

The similarities and differences between the two studies provide interesting insights into the supply of regulated child care. They show very clearly the value of considering the specific implications for child care policies on a local basis, given the great variation in patterns of child care supply.

The next NCCP Child Care Research Partnership report will focus on the relationship between child care subsidies and regulated child care supply. For more information, contact Ann Collins at (212) 304-7126.

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Children and Welfare Reform

Issue Brief 5

Child Care by Kith and Kin–
Supporting Family, Friends, and Neighbors Caring for Children

Ann Collins
Barbara Carlson

NATIONAL CENTER FOR CHILDREN IN POVERTY

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report June 1998

Characteristics of Children's Early Care and Education Programs: Data from the 1995 National Household Education Survey

Sandra L. Hofferth
University of Michigan

Kimberlee A. Shauman
University of California at Davis

Robin R. Henke
MPR Associates, Inc.

Jerry West
National Center for Education Statistics

U.S. Department of Education NCES 98-128
Office of Educational Research and Improvement

U.S. Department of Education
Richard W. Riley
Secretary

Office of Educational Research and Improvement
Ricky T. Takai
Acting Assistant Secretary

National Center for Education Statistics
Pascal D. Forgione, Jr.
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Content Contact:
Jerry West
(202) 219-1574

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Executive Summary

This report examines the characteristics of the care and education children receive on a regular basis before they enter school. In doing so, it addresses four questions that have surfaced with the prevalence of nonparental child care and children's increased participation in early childhood education programs:

- Were children at greater risk of school failure[1] less likely than other children to be in education programs or nonparental care arrangements that facilitate child development?
- Where did parents get information about their child care arrangements? In particular, was the cost of child care a good indicator of its quality?
- What were parents' preferences regarding nonparental child care and early childhood education programs?
- Were parents' preferences reflected in the types and characteristics of their children's primary nonparental care arrangements or early childhood education programs? Did parents get what they wanted?

To address these issues, this report focuses on various characteristics of child care arrangements that can be categorized into two groups: those that have been associated with children's development, and those that stem from parental concerns other than child development, such as staying within budgets or maintaining work schedules. Of the former, this study includes the following:

- the amount of time children spend in nonparental care;
- the number of different nonparental arrangements in which a given child is cared for;
- the ratio of children to staff;
- whether the teacher or child care provider was trained in child development;
- whether the care arrangement or education program offered services such as health or psychological screening;

[1]Children are defined as "educationally disadvantaged" or "at risk" if they have one of several characteristics that have traditionally been associated with school failure or developmental difficulties, such as being from a low-income or single parent family.

- whether parent involvement in the program was encouraged; and
- whether the teacher or care provider spoke English to the child most of the time.

Of the latter, child care characteristics that are relevant to parental concerns independent of child development, this study includes the travel time between the program and home, its cost, and the availability of sick child care.

The data from which the findings are drawn were collected as part of the 1995 National Household Education Survey (NHES:95), in which a nationally representative sample of the parents of children who were age 10 or younger and in third grade or below were interviewed. The survey not only obtained detailed information about children's nonparental care arrangements and early childhood education programs, but also gathered information about the parents and children themselves. The focus of this report is on children who were under age 6 and were not yet enrolled in kindergarten, whom we refer to as preschool children.

WERE CHILDREN AT RISK OF SCHOOL FAILURE LESS LIKELY THAN OTHER CHILDREN TO BE IN PROGRAMS OR ARRANGEMENTS THAT FACILITATE CHILD DEVELOPMENT?

In 1995, 59 percent of preschool children were in some type of nonparental arrangements on a regular basis.[2] Twenty-eight percent of preschoolers were in full-time nonparental care (i.e., 35 or more hours per week). Although infants were less likely than older children to be in nonparental care, among those children in regular nonparental care, younger children spent more hours per week in such arrangements than did older children. Furthermore, children at greater risk of school failure spent more time per week in nonparental care, on average, than did other children.

Being cared for in more than one nonparental care arrangement at a time may be detrimental to infants and very young children, who may require consistent caregiving in order to form the attachments necessary for later development. The NHES:95 data indicate that infants were rarely cared for in such arrangements, although the incidence increased with the child's age. The use of more than one nonparental care arrangement at a time was more common among children at greater risk of school failure than among other children.

[2]For simplicity's sake, from this point, "nonparental care arrangement" or "nonparental arrangement" is used to denote either nonparental child care or an early childhood education program.

Family income, a key risk factor, was strongly associated with the type of primary nonparental care children received. Compared with those of children from higher income families, the primary arrangements of children from low-income families were more likely to be Head Start programs, family child care, or relative care, rather than other center-based programs. The age of the child and the employment status of the mother were also associated with the type of primary child care arrangement. For example, older children were more likely to be in center-based care, and younger children in informal care arrangements (family child care, relative, or in-home care). Moreover, children of employed mothers were more likely to be in family child care, in-home care, or relative care and less likely to be in Head Start as their primary arrangement, than children of mothers who were not employed. Similarly, among children in multiple nonparental arrangements, informal arrangement combinations were more common among young children, whereas combinations of formal arrangements were more common among older children.

The characteristics of children's nonparental care varied with the type of care they received. Children who spent most of their time in in-home child care or in family child care were cared for with fewer children than those in other nonparental care arrangements, were more likely to have a care provider who spoke a language other than English with them, and were more likely to be cared for by their nonparental care provider when they were sick. Also, children in family child care were more likely to live within 10 minutes of their primary nonparental care provider than children cared for by relatives or enrolled in center-based programs. The cost of the primary nonparental care arrangement was highest for children in in-home and non-Head Start center-based care. Finally, formal center-based programs were more likely than other primary arrangements to offer trained child care providers and services such as developmental screening and health examinations.

Likewise, the attributes of children's primary nonparental care varied according to several family factors, after adjusting for other child and family characteristics and type of primary arrangement. Not surprisingly, children from families with incomes of more than $50,000 were in more expensive care than children from families with incomes of $15,000 or less. Children of mothers not in the work force were less likely to be enrolled in primary arrangements that offered sick child care and were more likely to be enrolled in programs close to their homes than children of mothers who were working or looking for work. In addition, the primary nonparental care providers of Hispanic children, children of other non-black minority racial–ethnic backgrounds, and children in predominately non-English-speaking households were much less likely to speak

English with them than those of white, non-Hispanic children and children in English-speaking households, respectively. Child/staff ratios and the training of the care provider were not related to the characteristics of the parents; however, ratios were related to child age, and ratios and training were both related to the type of child care arrangement.

Based upon the characteristics measured in this study, children at greater risk of school failure did not receive care or education of lower quality than did other children. Adjusting for other child and family characteristics and type of primary arrangement, children from low-income families were more likely than those from high-income families to have access to health-related services and sick child care through the primary arrangement. Several other risk factors, such as having a disability, not speaking English at home, being from a large family, and having a mother who had not received a high school diploma, were also associated with receiving more services. Considering the access to health-related services through their primary arrangements alone, children at greater risk of school failure were more likely to receive such services than other children. With respect to other child care characteristics associated with positive outcomes for children—the child/staff ratio, whether the care provider or teacher had training in child development, whether parent involvement was encouraged, and whether the child care provider spoke English with the child most of the time—there were no consistent differences between children at greater risk of school failure and other children.

WHERE DID PARENTS GET INFORMATION REGARDING CHILD CARE ARRANGEMENTS?

More than half of children's parents reported that friends were their source of information about their primary nonparental child care arrangements. Parents of older children were more likely to learn about the arrangement through a school, and employed mothers were more likely to do so from an employer.

Parents could not judge program characteristics by program cost. For example, they did not obtain a lower ratio of children to staff or more services when paying more, even after adjusting for the age of the child and other factors. The only child development-related care characteristic associated with price was provider training; primary arrangements with trained care providers cost parents more. Parents also paid more when care was close to home.

WHAT WERE PARENTS' PREFERENCES REGARDING CHILD CARE ARRANGEMENTS?

Parents' preferences for child care characteristics were consistent with child development experts' opinions on the characteristics that matter to children's development. Parents were more likely to report that having a small number of children and a trained provider were important in choosing a child care arrangement than to say that cost and convenience were important.

For each of six child care characteristics—the availability of sick child care, the number of children cared for at the same time, whether care was provided at reasonable cost, whether the care provider was trained in child development, whether the care provider spoke English with the child most of the time, and whether the care was close to home—parents were asked whether the characteristic was very important, somewhat important, or not important in choosing a child care arrangement. With the sole exception of sick child care, which 49 percent of parents reported was important, more than half of all parents reported that each of these characteristics was very important in selecting a child care arrangement.

A few child and family characteristics were associated with parents' preferences. For instance, the age of the child was related to parents' preferences: whereas parents of young children were more often concerned about the number of children cared for and whether sick child care was available, parents of older children were more often concerned about having a trained provider and whether English was spoken. Mothers seeking work were concerned about the cost of care and availability of sick child care more often than mothers who were already employed. Families with one or more risk factors were more concerned about the cost of care, convenience, the availability of sick child care, and provider training, compared with families with no risk factors.

DID PARENTS GET WHAT THEY WANTED?

In general, when parents reported that a characteristic was very important to them, their children were likely to be in a primary arrangement with that characteristic. There was one exception, however. No association was found between a preference for care of reasonable cost and being in a less costly arrangement, adjusting for other factors. This may be because what parents think is "reasonable" cost varies with household income or because parents are constrained in their choices. In addition, although children whose parents wanted trained child care providers did tend to have them, the link between parents' preference for a small number of children and the

child/staff ratio in the child's program was found only when type of arrangement was not controlled.

Children whose primary arrangements were family child care were less likely than those in a child care center to have care providers who were trained in child development. This is consistent with the result that children whose parents wanted a trained provider were less likely to be cared for in family child care or in relative care than in center-based care. In addition, informal arrangements are more likely than center-based care to provide sick child care. Consistent with this, those children whose parents preferred sick child care were more likely to be placed in family child care or relative care than in non-Head Start center-based care. Parents do appear to obtain arrangements that fit their preferences.

SOME IMPLICATIONS

Previous studies have found parents to be less concerned about the training of their child's care provider than about other aspects of the care setting such as cost and convenience. These new data suggest that parents recognize the importance of having a trained provider and prefer their child's provider be trained in child development. In addition, training is the one quality characteristic for which parents apparently pay more, and it is also the one quality characteristic that is linked with parents' choice of arrangement. Since training is viewed by the child development community as a key component of quality child care, these findings offer promising signals that parental preferences and child development experts' recommendations diverge less than believed.

Running Head: CHILD-CARE CLASSES

Child Outcomes When Child-Care Center Classes Meet Recommended Standards for Quality

NICHD Early Child Care Research Network

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NICHD Early Child Care Research Network
CHDB - NICHD
Building 61 - 4B05
9000 Rockville Pike
Bethesda, MD 20892

Abstract: 176
Text: 3990
Tables: 3

Child Outcomes When Child-Care Center Classes Meet Recommended Standards for Quality

Abstract

Objectives. Recommended standards for regulable features of child-care centers have been published in a 1992 joint report issued by the American Academy of Pediatrics and the American Public Health Association.

Methods. Data from the NICHD Study of Early Child Care were used to examine the association between meeting recommended standards for child-staff ratios, group sizes, caregiver training, and caregiver education and children's development at 24 and 36 months.

Results. There were five major findings: (1) most classes observed did not meet all four recommended standards (compliance ranged from 10% at 6 months to 34% at 36 months), (2) linear associations were found between number of standards met and child outcomes and this was more the case at 36 months than 24 months, (3) there was no evidence of threshold effects, (4) children in classes that met more standards had better scores on school readiness and language comprehension as well as fewer behavior problems at 36 months, and (5) child outcomes were predicted by child-staff ratio at 24 months and caregiver training and education at 36 months.

Chi[illegible] Outcomes When Child-Care Center Classes Meet Recommended Standards for Quality

NICHD Early Child Care Research Network

This report focuses on a single basic question: Do children perform better, in terms of their cognition, language, and social competence, when they receive child care that meets professional standards for quality? Although all fifty states regulate child-care centers, there is considerable variability in the stringency of regulated standards. For example, mandated child-staff ratios for infants range from 3:1 to 12:1 and for 3-year-olds range from 7:1 to 17:1. In those states that regulate group size, standards for infants permit from 6 to 20 infants in a group. Standards for caregiver training range from a college degree to no formal training at all. At least one study has found that none of the 50 states currently meets a variety of standards for infant and toddler care with respect to group composition (child-staff ratio and group size) and caregiver training (general education and specialized training).[2]

Evidence that standards might be important for children's well-being and development is found in previous research.[3,4,5,6,7,8] Lower child-staff ratios, smaller group sizes, and higher levels of caregiver education and training have each been found to be associated with higher scores on measures of children's development. Stronger effects are typically found when these features are analyzed jointly. For example, children's adjustment in kindergarten was significantly related to a composite measure consisting of child-staff ratio, group size, caregiver training, and physical space.[9]

A number of professional organizations have provided child care recommendations in an effort to set national standards to safeguard the well-being of children. The American Public Health Association and the American Academy of Pediatrics joined forces in 1992 to formulate a comprehensive set of standards, resulting in the publication of a comprehensive and detailed manual for child care workers. The view of health reflected in the standards is broader than a biomedical model.[10] From its systems theory perspective, child care is seen as an environment that provides opportunities for sensitive caregiving, nutrition, safety, and learning. Data are needed with which to evaluate the effectiveness of these standards with respect to children's development.

The NICHD Study of Early Child Care provides an opportunity to examine the consequences for children when centers meet recommended standards in child care. This longitudinal investigation, begun in 1991, is an

ecological study of children enrolled in the study at birth, independent of parents' plans for child care. A cohort of 1,364 children from diverse social and ethnic backgrounds was identified in nine states and assessed at multiple ages in multiple settings, including home and child care. Mirroring national statistics, most of the families in the study used some form of nonmaternal care, beginning in the first year of the infant's life. Approximately 80% of the infants in the study experienced some regular nonmaternal child care during their first year.[11] The percentages of children enrolled in child-care centers -- the focus of this report -- were: 12% at 6 months, 17% at 15 months, 25% at 24 months, and 38% at 36 months. We predicted that children enrolled in child-care center classes that met more professionally recommended standards would perform better on measures of cognition, language, and social competence than children enrolled in classes that met fewer of these standards.

Method

Participants

Families participating in the study were recruited through hospital visits to mothers shortly after the birth of a child in 1991. Families lived in or near Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; and Madison, WI. There were 3 phases of enrollment. First, of the 8,986 families who gave birth during the sampling period, 5,416 (60%) met the eligibility requirements (mother healthy, over 18, conversant in English; child healthy, singleton, and not being adopted; family not planning to move, in neighborhood not extremely unsafe, living within one hour of research site (university), and not participating in another study); 130 mothers refused to be interviewed in the hospital (1%); 308 refused to be contacted again (3%). Second, 3,015 (56% of eligible families) were invited to participate in the study. Mothers from the eligible pool were called using a conditional random sampling plan that ensured the recruited families reflected economic, educational, and ethnic diversity. Third, of the 3,015 families called, 1,526 (51%) agreed to participate. Families could not participate for a number of reasons (60 babies were in the hospital for 7 or more days, 91 families were planning to move, 512 families could not be contacted, 641 families refused, and 185 families had other reasons). Of the 1,526 families who agreed to participate, 1,364 (89%) completed the one-month visit. Of the 1,364 families who began the study, 1,216 (89%) continued through 36 months. For the present report only those children who were enrolled in child-care centers (and for whom we also

had relevant family and child outcome data) were included (ns = 97 at 6 months, 118 at 15 months, 163 at 24 months, and 251 at 36 months).

Measures

Child-care variables. Children were observed in their child-care centers when they were 6, 15, 24, and 36 months old. Observations were conducted on two half-day visits scheduled within a 2-week interval at each of these ages. At each visit, observers completed two 44-minute cycles of the Observational Record of the Caregiving Environment (ORCE), an instrument developed for this study to assess the characteristics of care for an individual child.[12] After the second day's observations were completed, the caregiver with whom the child spent the most time while we were observing was interviewed to obtain information about education and training.

Child-staff ratios were recorded by child-care observers at the beginning and end of each observation cycle, and subsequently the average child-staff ratio across cycles was calculated. All adults were counted (qualified staff included caregivers, assistant caregivers, and aides who worked in classes at least 10 hours per week). Group size was calculated as the average number of children under age 13 across all observation cycles. Caregivers' formal training was scored from the interview to reflect training in child development or early childhood education in one of the following categories: 0 = none, 1 = high school level courses, 2 = vocational/technical school courses, 3 = college courses, 4 = college degree. Caregivers' education was scored as a 6-level variable: 1 = less than high school graduation, 2 = high school graduate, 3 = some college, 4 = college degree, 5 = some graduate work, 6 = advanced degree.

To create an index of the extent to which a class met the standards recommended by experts, we used the child-staff ratios, group sizes, and training requirements published by APHA/AAP.[13] We selected these standards because they were specific, recent, and issued by two important professional organizations. These standards were as follows: child-staff ratios of 3:1 at 6 and 15 months, 4:1 at 24 months, and 7:1 at 36 months; group sizes of 6 at 6 and 15 months, 8 at 24 months, and 14 at 36 months; a training level of formal, post high school training (including certification or a college degree) in child development, early childhood education, or a related field, at all four ages. Because higher education has been shown to be a predictor of better practice in numerous studies[8,10,11] we supplemented these standards with an additional one -- level of caregiver general education that included at least some college. Each class observed received a score of 0 or 1 on each of the four regulable features

of child care to quantify whether it met the recommended standard; classes also received a total score for the number of recommended standards it met (from 0 to 4).

Family variables. Five family variables were included as potential covariates: (1) the ratio of income to needs, calculated as the total family income divided by the poverty threshold for their family size, averaged over the four assessment points (6, 15, 24, and 36 months), (2) maternal education, (3) concurrent single parent status, (4) child gender, and (5) maternal sensitivity, as assessed by ratings of mother-child interaction during semi-structured play.

Child outcome variables. At 24 months, the Bayley II Mental Development Index[17] was administered to assess children's overall cognitive development. At 36 months, 51 items constituting the school readiness composite (colors, letter identification, numbers/counting, comparisons, and shapes) of the Bracken Basic Concepts Scale were administered,[18] and total scores were converted to percentiles. The Reynell Developmental Language Scales, which consist of two 67-item scales measuring language comprehension and expressive language, were also administered at 36 months[19] and total scores were converted to standard scores (M=100, sd=15). For all these measures, testers were trained and certified at a central location prior to the beginning of data collection.

Mothers' reports of their children's problem behavior and positive social behavior were obtained at both 24 and 36 months using two instruments: the Child Behavior Checklist - 2/3 (CBCL),[20] on which mothers rated how characteristic each of the 99 listed behaviors was of their child over the last 2 months (0 = not true, 1 = sometimes true, 2 = very true), and the Adaptive Social Behavior Inventory (ASBI),[21] on which mothers rated 30 descriptions of the child's behavior on 3-point scales representing frequency of occurrence (1 = rarely, 2 = sometimes, 3 = always). Four scales from the CBCL (externalizing, internalizing, sleep problems, and somatic problems) and the disruptive behavior scale from the ASBI were standardized (M=0, sd=1) and summed as a composite index of mother-reported behavior problems. The two remaining subscales from the ASBI (expressive and comply) were standardized and summed as mother-reported positive social behavior.

Data analysis plan. First, the nine study states were compared with the other states with respect to the four child-care standards using t-tests to determine their representativeness. Second, descriptive statistics for the four regulable features were computed. Third, multivariate analyses of covariance (MANCOVA) were conducted to determine whether meeting suggested standards was related to child outcomes. Separate MANCOVAs were

conducted for each regulable feature on outcomes at each age. Lastly, the extent to which number of standards met was related to child outcomes was examined using MANCOVAs. Number of standards met was treated as a five-level categorical variable and a linear trend analysis tested the extent to which children in classes that met more standards tended to perform better than children in classes that met fewer standards.

Results

To determine the representativeness of the nine study states with respect to the four child-care standards, we used existing state-level data for the 50 states and the District of Columbia on mandated child-staff ratios, group sizes, caregiver formal training, and caregiver education at 9 and 30 months, the two ages for which data were available.[5] Four t-tests were run comparing ratio and group size between the 9 study states and the remaining 41 states plus the District of Columbia at both ages. Two chi-square tests were performed comparing the proportion of states meeting APHA standards for caregiver education and training in the 9 study states versus the remaining states. All tests were nonsignificant; thus, there is no evidence of bias in the selection of the nine states.

Descriptive statistics for the four regulable features in the observed centers are presented in Table 1. At the three youngest ages, the average observed child-staff ratio exceeded the recommended level by one child per adult; specifically, the average observed child-staff ratio was 4:1 (vs. the recommended 3:1) at 6 and 15 months and 5:1 (vs. 4:1) at 24 months. At 36 months, the observed child-staff ratio was equivalent to the recommended child-staff ratio (7:1). The average observed group size also exceeded the recommended level at 6 and 15 months (8 children rather than 6) and 24 months (11 children rather than 8), whereas at 36 months it met the recommended standard (observed group size = 13; recommended maximum group size = 14). The average observed levels of caregiver formal training and education approximated the levels we set as the guideline in our analyses at all four ages. The majority of caregivers had some formal, post high school training in child development or early childhood education and at least some college education.

The total number of recommended standards met increased as the children got older. Only 10% to 12% of the classes observed met all four standards at 6, 15, and 24 months, whereas 34% of the classes met all four at 36 months. Nearly 20% of the classes failed to meet any of the recommended standards at the two youngest ages, whereas only 3% of the classes failed to meet any at the oldest age.

Five family variables (income-to-needs, maternal education, single parent status, child gender, and maternal sensitivity) known to relate to both families' child care selection and children's development were examined for possible inclusion in analyses as covariates. At 24 months, two of the five family variables were associated with the number of recommended standards child-care centers met: income-to-needs [$F(4,158) = 2.91$, $p<.03$] and maternal education [$F(4,158) = 6.84$, $p<.001$]. Predictably, these variables were lowest in centers that met no standards. At 36 months, only maternal sensitivity was associated with number of standards met [$F(4,245) = 3.47$, $p<.01$] and also was lowest in centers that met no standards. Because maternal education and income-to-needs were highly correlated at both 24 and 36 months, we decided to include only one as a covariate. Income-to-needs was selected because it was less correlated with maternal sensitivity and thereby provided a more independent control.[a] Thus, we included two covariates in all further analyses: income-to-needs and maternal sensitivity

When we conducted MANCOVAs to compare children in classes that met a given standard with children in classes that did not, separately for each of the four regulable features, results indicated that concurrent child outcomes differed significantly as a function of the standards for child-staff ratio at 24 months [$F(3,157)=3.61$, $p=.015$], caregiver education at 36 months [$F(5,242) = 4.94$, $p=.0002$] and caregiver training at 36 months [$F(5,242) = 3.74$, $p=.003$]. Adjusted means and univariate comparisons are displayed in Table 2. Meeting the recommended ratio standard was associated with fewer behavior problems and more cooperative behaviors at 24 months. Meeting standards for caregiver education and training was associated with higher school readiness and language comprehension scores and fewer behavior problems at 36 months.

As a next step, we examined the associations between the number of standards classes met and child outcomes. The multivariate test of the linear trend was not significant at 24 months; however, one of the three univariate tests was. Fewer behavior problems were reported for children in classes that met more standards. At 36 months, the multivariate test of the linear trend was significant [$F(5, 239) = 3.26$, $p=.007$] and the univariate linear contrasts were significant for three of the five outcomes. Children in classes that met more recommended standards displayed higher school readiness and language comprehension scores and fewer behavior problems (see Table 3).

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[a] Analyses were also re-run with maternal education replacing income-to-needs as a covariate; a similar pattern of results was obtained.

Effect sizes were computed as the average change in an outcome associated with a one-point increase in the number of standards met, divided by the estimated standard deviation under the analysis model. Average change was estimated from the group means based on the assumption that number of standards and outcome measures were linearly related. These analyses indicated that increasing the number of standards met by one was associated with modest amounts of change: a decrease on the behavior problems composite of .53 points at 24 months (effect size of .16) and .84 points at 36 months (effect size of .24), and an increase of 4.40 percentile points on the 36-month school readiness score (effect size of .20) and 2.41 points on the language comprehension standard score (effect size of .19).

In a series of post-hoc analyses we examined contrasts for possible thresholds in the linear trends. All were significant: 0 or 1 versus 2 to 4 standards met [$F(5,239) = 3.62$, $p=.004$]; 0 to 2 versus 3 or 4 [$F(5,239) = 4.08$, $p=.004$]; 0 to 3 versus 4 [$F(5, 239) = 4.23$, $p=.001$]. Because all contrasts were significant, there does not appear to be any threshold; instead, analyses at 36 months consistently indicate that when children attended classes that met more standards their cognitive, language, and social development was better than when they attended classes meeting fewer standards.

The analyses described thus far focused on the concurrent effects of child-care standards on child outcomes (i.e. both measured at the same point in time). In a final set of analyses, lagged effects were examined. For the 87 children in center-based care at both 15 and 24 months, 24 month outcomes were predicted from the number of standards met at 15 months; for the 127 children in center-based care at both 24 and 36 months, 36 month outcomes were predicted by number of standards met at 24 months. In neither case were there significant lagged effects. Note that the associations between number of standards met at consecutive ages was moderate: r = .35 between 15 and 24 months and r = .34 between 24 and 36 months.

Discussion

This report began with the question of whether children have better outcomes when they attend centers where classes meet more professional standards for child-staff ratio, group size, caregiver training, and caregiver education. The answer to this question depends upon a child's age, the outcome, and the specific child-care standard. Outcomes were better when children attended classes that met the recommended child-staff ratio at 24

months and the recommended levels of caregiver training and education at 36 months. Further, the more standards met, the better the outcomes for school readiness, language comprehension, and behavior problems at 36 months. These results complement previous findings from the NICHD Study of Early Child Care showing significant associations between observed child-care quality (i.e., caregiver behavior with children) and children's cognitive, language and social outcomes.[11, 23] Beyond this general statement, the data raise a number of issues that deserve further comment.

First, classes for older children were more likely to meet the recommended standards than classes for infants and toddlers. Three times as many 3-year-old classes met the recommended standards as did classes for under 3's. Does this mean that the quality of care is better for older children than for younger children, or is it simply that the recommended standards for older children are easier to follow? It is certainly true that the recommended standards for ratios and group sizes at 36 months are more affordable than the standards at younger ages. It appears that this is not the whole explanation, however, because the levels of caregiver training and education were also higher in older children's classes. Apparently, in terms of these four child-care features and the recommended standards set by experts, the center-based care received by preschoolers in this sample was better than the care provided infants and toddlers. Regardless, it is important to highlight the failure of most centers in this sample to meet standards at younger ages, especially standards regarding child-staff ratio and group size.

A related issue concerns the fact that associations between regulable features and child outcomes were stronger at 36 months than at 24 months. It may be that variations in child care environments are less important at the younger age. On the other hand, it is important to note that child outcomes cannot be measured in identical ways and with identical reliabilities at different ages and that our power to detect associations increased with age as the sample size increased. Any of these could explain why there were more statistically significant associations at 36 months. Available data from the National Longitudinal Survey of Youth also have shown that the associations between child outcomes and regulable features of care were stronger for preschoolers (age 3-5) than for younger children (age 0-2).[24] When the data we have collected on the children in the NICHD study at older ages are analyzed, we will learn more about the consistency of age differences in the links between standards and child outcomes.

A third issue is whether there is a critical cut-off point with regard to the recommended standards; that is, if a class meets one or two or three recommendations is this as good as meeting all four? The answer to this question seems to be, no -- the more recommendations followed the better children performed.

Another question of interest is whether following more recommended standards is associated with better outcomes or failing to follow recommendations is associated with poorer outcomes. Although the constraints of a naturalistic research design make it impossible to determine unequivocally the direction of effects between child-care parameters and child outcomes, differences between the population norms and adjusted means in the extreme groups (that is, classes that met none of the recommended standards and classes that met all of them) were examined to address this question. The mean school readiness percentile score was 36.1 (about 14 percentiles below the population norm of 50) for children in classes meeting none of the recommendations versus 51.8 (approximately average) for children in classes meeting all of them. For language comprehension, there was evidence that not meeting any recommended standards was related to lower than average scores (M=95.6) whereas meeting all of them was associated with above-average scores (M=104.7). The behavior problems measure included two scores with population norms, the CBCL externalizing and internalizing scales. Separate ANCOVAs conducted for the two scales revealed that children in classes not meeting any recommendations had more problems of both kinds than the norming population at 36 months, whereas children in classes meeting all recommendations scored at the mean for this population at both 24 and 36 months. To understand the social significance of these findings, it is helpful to ask how many children were in classes whose failure to meet recommendations was associated with below average performance. Below average school readiness was observed for children in classes that met fewer than two recommendations -- 16% of the sample; below average language comprehension was observed for children in classes that met none of the recommendations -- 3% of the sample; and more behavior problems than average were observed for children in classes meeting no recommendations at 24 months (9% of the sample) and fewer than three recommendations at 36 months (42% of the sample).

A final issue concerns the size of identified associations; that is, how substantial were differences in children's performance that were associated with whether or not their classes met recommended standards. The effect sizes were modest, as has been the case in child care research generally.[25] As the study continues, and children are assessed when they are 54 months and then again in first grade, we will find out whether these

differences observed at 36 months presage long-lasting outcomes of attending child-care centers that met or failed to meet the standards recommended by professional organizations. In the meantime, these data should be added to the growing research literature[2, 3, 4, 5, 6] documenting relations between child-care standards and developmental outcomes for children.

These relations between standards and children's development raise important issues for policy makers. The concurrent analyses suggest that the failure of many states to impose stringent standards and the failure of many centers to meet such standards may undermine children's development. The fact that 24% of the classes observed at 24 months were not in compliance with their state's group size standard, with noncompliance in some states running as high as 60%, leads one to wonder whether current policies and enforcement practices actually place some children at risk. If so,these findings support a policy of more stringent child care regulation, including the adoption of national standards. Some, however, might question the return on investment that might result from the added cost of raising standards, because the lagged analyses, which admittedly lacked the statistical power of the concurrent analyses, failed to reveal significant effects. Clearly, more work in this important area is needed; the NICHD Study of Early Child Care will continue to monitor concurrent and lagged effects as the children grow older.

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Author Note

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Table 1

Descriptive Statistics for Regulable Features of Child Care at Each Age Assessed

	Descriptive Statistics						
Regulable Feature	n	M	sd	Minimum	Maximum	Recommended level	Proportion of classes meeting recommended level
6 months							
Child-staff ratio	97	4.26	2.31	.81	15.06	3	.36
Observed group size	97	7.86	4.05	1.63	30.13	6	.35
Caregiver training	97	1.70	1.55	0	4	2	.56
Caregiver education	97	2.97	1.07	1	6	3	.65
15 months							
Child-staff ratio	118	4.14	1.30	1.50	7.88	3	.20
Observed group size	118	8.53	3.28	2.38	23.38	6	.25
Caregiver training	118	1.64	1.38	0	4	2	.60
Caregiver education	118	2.89	.89	1	5	3	.69

Descriptive Statistics for Regulable Features of Child Care at Each Age Assessed (cont)

Regulable Feature	n	M	sd	Minimum	Maximum	Recommended level	Proportion of classes meeting recommended level
24 months							
Child-staff ratio	163	5.22	1.70	1.68	10.95	4	.26
Observed group size	163	10.66	4.78	3.38	37.75	8	.28
Caregiver training	163	1.84	1.37	0	4	2	.65
Caregiver education	163	3.06	.86	1	5	3	.77
36 months							
Child-staff ratio	250	6.98	2.32	1.92	14.90	7	.56
Observed group size	250	13.20	4.63	3.50	32.63	14	.63
Caregiver training	250	2.10	1.33	0	4	2	.75
Caregiver education	250	3.24	.91	1	6	3	.80

Note. Ratios and group sizes are averages based on a minimum of six observations.

Table 2

Adjusted Means for Children in Settings that Did or Did Not Meet Specific Child Care Standards

		Child-Staff Ratio		Group Size		Caregiver Education		CG Training	
		Met	Not Met	Met	Not Met	Met	Not Met	Met	Not Met
24 months	n	43	120	45	118	38	125	57	106
Mental Development	M	99.26	95.82	97.87	96.29	97.00	95.84	97.63	95.06
	se	1.78	1.06	1.75	1.08	1.06	1.96	1.14	1.57
Behavior Problems	M	-1.54	.07 **	-.09	-.15	-.30	-.55	-.51	-.07
	se	.50	.30	.50	.31	.30	.56	.33	.45
Positive Social Beh.	M	.79	.13 *	.47	.24	.33	.20	.39	.15
	se	.24	.14	.24	.15	.14	.27	.16	.21
36 months	n	140	110	157	93	201	49	187	63
School Readiness	M	49.77	47.12	49.23	47.56	51.06	38.52***	51.09	41.22 **
	se	1.92	2.17	1.82	2.37	1.57	3.19	1.64	2.82
Expressive Language	M	99.96	97.60	99.60	97.77	99.63	96.01	99.40	97.48
	se	1.11	1.25	1.05	1.37	.92	1.88	.96	1.66
Language Comprehension	M	103.81	101.02	103.21	101.52	103.50	98.81 *	104.03	98.27 **
	se	1.07	1.21	1.02	1.57	.91	1.85	.88	1.58

Adjusted Means for Children in Settings that Did or Did Not Meet Specific Child Care Standards (cont)

		Child-Staff Ratio		Group Size		Caregiver Education		CG Training	
		Met	Not Met	Met	Not Met	Met	Not Met	Met	Not Met
Behavior Problems	M	-.66	.57 **	- 32	.23	-.51	1.49 ***	-.41	.76 *
	se	.30	.34	.29	.37	.25	.50	.26	.45
Positive Social Beh.	M	.31	-.16 *	.11	.09	.13	.01	.11	.09
	se	.14	.16	.13	.17	.12	.24	.12	.21

Note: At 36 months, the ratio standard was 7.1, the group size standard was 14, the caregiver education standard was some college, and the caregiver training standard was some post high school training in child development, early childhood education, or a related field. Underlined pairs of means were significantly different from one another. Child outcomes and child care standards were measured concurrently.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3

Linear Trends Relating Number of Recommended Standards Met to Child Outcomes

		Adjusted Means by Number of Standards met					Linear Trend	
		0	1	2	3	4	F	p
24 months								
	n	15	38	65	29	16		
Mental Development	M (se)	95.4 (3.0)	93.8 (1.9)	97.2 (1.5)	98.6 (2.2)	99.7 (3.0)	2.19	.14
Behavior Problems	M (se)	.34 (.86)	-.12 (.54)	-.19 (.41)	-.40 (.62)	-2.17 (.84)	4.18	.04
Positive Social Be.	M (se)	.31 (.41)	-.02 (.26)	.16 (.20)	.74 (.30)	.86 (.40)	2.25	.14
36 months								
	n	8	31	65	60	86		
School Readiness	M (se)	36.1 (8.0)	38.9 (4.1)	47.9 (2.8)	51.5 (2.9)	51.8 (2.4)	6.29	.01
Expressive Language	M (se)	92.3 (4.7)	98.6 (2.4)	95.8 (1.6)	101.4 (1.7)	100.2 (1.4)	3.34	.07
Language Comprehension	M (se)	95.6 (4.5)	99.1 (2.3)	100.1 (1.6)	105.0 (1.6)	104.7 (1.4)	6.03	.02
Behavior Problems	M (se)	2.69 (1.25)	.81 (.63)	.31 (.43)	.04 (.45)	-1.14 (.38)	9.59	<.01
Positive Social Be.	M (se)	[illegible]	[illegible]	-.10 (.21)	.14 (.22)	.27 (.18)	.47	.49

Note: Family income-to-needs ratio and maternal sensitivity were used as covariates.

UNIVERSITY OF NEW HAMPSHIRE

Department of Psychology
Conant Hall
10 Library Way
Durham, New Hampshire 03824-3567
(603) 862-2360

To: Audrey Page
Domestic Policy Council
White House

Phone (202) 456-5582
Fax (202) 456-2878

From: Kathleen McCartney
University of New Hampshire
Department of Psychology

Phone (603) 862-3168
Fax (603) 862-4986

Date: April 20, 1999

Re: Requested paper

Attached you will find a copy of the embargoed paper "Child Outcomes when Child Care Center Classes Meet Recommended Standards for Quality" which will appear in the *American Journal of Public Health*.

Kathleen McCartney

Effect Sizes from The NICHD Study of Early Child Care

NICHD Early Childhood Research Network

Paper presented at the Biennial Meetings of the Society for Research in Child Development, Albuquerque, New Mexico, April 17, 1999

OVERHEAD 1: title

I am here to report on effect sizes from the NICHD Study of Early Child Care.

OVERHEAD 2: phase I investigators

The author of this paper is the NICHD Early Child Care Research Network, whose members are listed here.

Introduction

The study is a longitudinal investigation of children from birth through first grade; in this report, we summarize our child care quality findings through 36 months. Our framework, from the outset, has been a broad ecological model that includes the home environment, the child care environment, social structure, and demography. In our work we have focused on five parameters of child care: age at entry, amount, quality of child care, consistency, and type.

OVERHEAD 3: cartoon

In a recent New Yorker cartoon one child asks another, "Why are they always pushing quality on us?" The answer is simple -- because a large number of studies have documented that child care quality is associated with a wide range of child outcomes (Lamb, 1998). Recently, however, Scarr (1998) has argued that these findings are small and short-lived. Consequently, she has suggested that states should examine the cost:benefit ratio of their child-care regulations. Because the social policy implications are great, the question that guides this symposium, does child care quality matter, is of practical importance. Data from the NICHD Study of Early Child Care can be used to inform this

debate. The main contribution of this longitudinal study of child care over most previous studies is its scope, especially with respect to the assessment of child care and family contexts.

OVERHEAD 4: location of data collection sites

Participants in the study were recruited by ten research sites during the first eleven months of 1991 from 24 hospitals. The sites were selected by competitive review of proposals.

OVERHEAD 5: enrollment process

Screening and enrollment were accomplished in three stages: a hospital screening at birth, a two-week phone call, and a one-month interview. 8986 mothers were screened in the hospital, 5416 (60%) of whom were eligible and agreed to the two-week phone call. A conditionally random sample of 3015 (56%) was selected as participants. The conditioning assured adequate representation of employed mothers, single parent households, mothers with less than a high school education, and ethnic minority mothers. Additional screening identified 1526 (51%) eligible and consenting families, of whom 1364 (89%) completed the one-month interview and became study participants.

OVERHEAD 6/7: characteristics of the whole sample

This table shows the characteristics of the sample. Although the sample was not designed to be nationally representative, it is nevertheless diverse with respect to family income, maternal education, and ethnicity. For example, in 1990, the year before we recruited our sample, 75.6% of the US population was categorized in the US Census as "white, not Hispanic," a figure very close to our 76.4%

OVERHEAD 8/9: characteristics of child care sample

Here are the characteristics of the subsample of children who were observed in child care. All analyses presented today used this subsample.

OVERHEAD 10: data collection schedule

This table provides an overview of our data collection schedule.

OVERHEAD 11/12: constructs measured

A wide range of constructs were assessed, many with multiple measures.

For this study, we constructed a new measure to assess quality, called the Observational Record of the Caregiving Environment. Trained, reliable research assistants observed child care settings for four 44-minute cycles over two days.

OVERHEAD 13: frequencies

During each cycle, they coded the frequencies of specific behaviors such as shared positive affect.

OVERHEAD 14: ratings

Following each cycle, they rated settings using qualitative scales such as sensitivity/responsiveness to nondistressed communication. Composites were formed from ratings to create an index of overall quality. This index was highly related to composites comprised of the frequencies (r's ranged from .64 to .74 from 15 to 36 months).

OVERHEAD 15: child outcomes used in this report

To date we have examined the association of quality with several sets of child outcomes at 36 months, including cognitive/language measures, social behavior, and peer behavior. This table presents the major child outcome variables from our 36-month data set.

Data Analysis Plan

In our previous work, variables included in regression models, both with respect to selection variables and predictor variables, have varied by child outcome (NICHD ECCRN, 1998; NICHD ECCRN, under review-a; NICHD ECCRN, under review-b). Models were different by design; they reflected domain-specific conceptual factors. Here, we present two sets of models between child care quality and child outcomes. Each contains a common set of selection variables in order to be able to compare effect sizes across outcomes. There are two families of effect sizes, r and d (Rosenthal, 1994). For each outcome, we conducted two analyses, a regression analysis that yielded an r and a mean groups analysis that yielded a d -- r refers to a measure of association between two variables, and d refers to the difference between two means divided by the standard deviation of the control group.

OVERHEAD 16: selection variables and how they were created

The same set of selection variables were used in both analyses. They included 9 dummy-coded variables to represent the 10 sites, mother's education, income-to-needs, mother's adjustment, home quality, gender, percent time in center care, and hours in child care.

For the regression analyses, we computed zero-order correlations between 36-month child outcomes and observed quality averaged across time as well as partial correlations between outcomes and quality with family selection variables controlled statistically. The true parameter estimates for quality probably lie somewhere in between the zero-order correlations, which are undercontrolled, and the partial correlations, which may be overcontrolled.

For the mean groups analyses, we compared children in high-quality child care with those in low-quality care in MANCOVA models. The value of conducting extreme groups comparisons is twofold: they provide a less conservative test than the partial r's and mean-group differences are more intuitively interpretable.

To summarize, the regression analyses yielded r's and the MANCOVA's yielded d's. Interpretation of effect size estimates is not straightforward. As Rosenthal (in press) has suggested, "neither experienced behavioral researchers nor experienced statisticians have a good intuitive feel for the practical meaning of common effect size estimates" (p. 10). One strategy that Rosenthal and others have used for evaluating effect size estimates is to compare them with other well-documented effects, like the effect of aspirin on reducing heart attacks, a well-documented finding where r is .03 (Steering Committee of the Physicians' Health Study Research Group, 1988). For comparisons purposes, we decided to conduct parallel analyses for two other predictors: child care hours and home quality. Child care quality was substituted as a covariate for these analyses.

To identify high and low groups, we conducted quartile splits. For child care quality, children in the top quartile were in places that were 1.02 standard units above the mean and children in the bottom quartile were in places that were 1.04 standard units below the mean. For child care hours, children in the top quartile were in care for an average of 44.7 hours and children in the bottom quartile were in care for an average of 8.9 hours. For home quality, children in the top quartile were in homes that were

.76 units above the mean and children in the bottom quartile were in homes that were .90 units below the mean.

Results

And now, the results, presented separately for each child outcome.

OVERHEAD 17: School readiness

Here are the results for school readiness. The bar graph on the left displays the regression analyses and the graph on the right displays the MANCOVA models. Associations between child care quality and school readiness were significant. Note that r's decreased by half when selected covariates were included in models. Associations were not significant for child care hours, but were significant for home quality. Effect size estimates for child care quality were half those for home quality.

OVERHEAD 18: Expressive language

The results for expressive language parallel closely those for school readiness with respect to the pattern of results as well as the magnitude of effect size estimates.

OVERHEAD 19: Receptive language

The results for receptive language were similar to those for school readiness and expressive language, but effect sizes were smaller.

OVERHEAD 20: Behavior problems (mother)

There were no significant effects. Note that associations with both child care quality and home quality disappear when selection controls were included in models.

OVERHEAD 21: Positive social behavior (mother)

Only home quality was significantly associated with positive social behavior. Again, the association with child care quality disappeared when selection controls were included.

OVERHEAD 22: Behavior problems (caregiver)

Only home quality was significantly associated with behavior problems.

OVERHEAD 23 Peer skills

Home quality was significantly associated with peer skills.

We also tested interactions between quality and hours. There was one significant interaction. To interpret it, we constructed quartile splits on both quality and hours and computed the 16 corresponding cells means. The pattern of means was not readily interpretable.

OVERHEAD 24: summary of effect size estimates

This table summarizes the effect size estimates for child care quality and home quality. Both child care quality and home quality were associated with the 3 cognitive/language variables; effect sizes for child care quality were half those for home quality. Note, however, that the home effects reflect both genetic and environment influence. This confound is greatly reduced for child care effects, because family selection is controlled statistically. Home quality was associated with 3 of the 4 social outcomes, but child care quality was not. In general, effect sizes were smaller for social outcomes.

Discussion

So, does child care quality matter? Rosenthal and Rubin (1982) have developed a procedure to display the practical importance of r, called the binomial effect-size display. To present findings in this way, research results are cast into dichotomous outcomes, such as above average vs. below average scores.

OVERHEAD 25: BESD for school readiness

Here is the binomial effect size display for the child care quality and school readiness finding, where the partial r was .11. It does not make sense to label as small an effect size equivalent to increasing above average school readiness scores from 43 percent to 57 percent. Moreover, it does not make sense to label as small an effect size that is half the size of a home quality effect. Thus, we argue that child care quality does indeed matter for school readiness and language.

In contrast, there is little evidence in these models that child care quality matters for social behavior. We know from our other work (see NICHD ECCRN, 1997, under review-b) that quality was associated with some social outcomes using domain-specific models. The models presented here may be overcontrolled -- we suspect that the mother-child interaction variables mediated child care quality associations.

Social policy should not be guided by one study, but rather by meta-analytic work. For this reason, these data need to be combined with those from other studies, like the Cost Quality and Outcomes and New Chances studies. Then, developmentalists can work with economists to conduct the kind of cost-benefit analyses suggested by Scarr -- assuming we can find suitable ways to quantify the benefits as well as the costs. Experimental studies of child care would help greatly in this regard. Finally, however, decisions about improving child care quality will rely on our collective values concerning how much to invest in improving a given child outcome by a given amount.

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UNIVERSITY OF NEW HAMPSHIRE

Department of Psychology
Conant Hall
10 Library Way
Durham, New Hampshire 03824-3567
(603) 862-3168

To: Audrey Page
Domestic Policy Council
White House

Phone (202) 456-5582
Fax (202) 456-2878

From: Kathleen McCartney
University of New Hampshire
Department of Psychology

Phone (603) 862-3168
Fax (603) 862-4986

Date: April 20, 1999

Re: Requested SRCD paper

Attached you will find a copy of the paper I presented at the Society for Research in Child Development conference last week. If you would like a copy of the overheads, please feel free to contact me. Thank you.

Kathleen McCartney