

# Child Care Cost and Quality

Suzanne W. Helburn  
Carollee Howes

## Abstract

This article summarizes what is known about the cost and quality of full-time child care in centers and family child care homes, and about parents' attention to quality in making child care choices. It relies primarily upon two recent studies which are among the first to collect detailed information about child care operating costs: the Cost, Quality, and Child Outcomes in Child Care Centers study<sup>1</sup> and the Economics of Family Child Care study.<sup>2,3</sup> Results indicate that mediocre quality is the rule and that parents often do not choose quality settings for their children. At the present time, child care quality is only modestly related to the cost of providing services. In part, the modesty of this relationship reflects the low wages of child care staff, the availability of in-kind donations in the nonprofit sector, and the altruistic motivations of many providers that depress direct costs and the fees charged for child care. The article concludes with recommendations for future action: (1) launch consumer education efforts; (2) implement higher standards for child care at the state level; (3) avoid public policies that encourage people to become child care providers if they have no interest in such a career; (4) increase public and private investments in child care; and (5) develop the means to compensate child care workers as is appropriate for their levels of training, experience, and responsibility.

*Suzanne W. Helburn, Ph.D., is professor emerita of economics at the University of Colorado at Denver.*

*Carollee Howes, Ph.D., is a professor of education at the Graduate School of Education at the University of California, Los Angeles.*

**W**hile there is an extensive literature on child care quality developed from the perspectives of psychology and education, the study of the cost of child care by economists, and especially the relation between cost and quality of services, is fairly limited. This article, a collaboration between an economist and a psychologist, examines what is known about child care cost and quality, and the linkages between the two.

The quality of child care is important because it is closely linked with children's social, cognitive, and language development.<sup>4</sup> Children in high-quality early childhood programs are more likely to be emotionally secure and self-confident, proficient in language use, able to regulate impulsive and aggressive inclinations, and advanced in cognitive development.<sup>5</sup> Over time, these children may experience enhanced school achievement, higher earnings, and decreased involvement with the criminal justice system.<sup>6</sup> In contrast, children who experience poor-quality child care are at risk for

---

---

poor long-term developmental outcomes, including apathy, poor school skills, and heightened aggression.<sup>5</sup>

Knowledge of the cost-quality relationship in child care matters to both policymakers and the participants in the child care market. It is important in designing policy concerning the financing of child care to know how much good care costs, which factors determine costs, and how likely it is that these factors will persist into the future. It is of equal importance to consumers who want to make sure that they are receiving the quality of care they believe they are paying for.

Generally, policymakers, consumers, and economists expect that higher-quality services should cost more than lower-quality services. This is particularly so in a labor-intensive industry such as child care, where the quality of staff is critical to good services. Wages for better-qualified staff members are expected to be higher than wages for less-qualified staff members, and higher wages will drive upward the costs of providing child care and the fees charged for services. On the other hand, competitive pressures within the child care market should keep costs, fees, and profits low, which might be expected to depress quality. Consumer demand also plays a role: if parents and third-party payers demand quality child care, providers are likely to supply it, and costs and fees will increase. In other words, economic theory and consumer intuition suggest that the cost and quality of child care should rise or fall together and that competition among providers and consumer demand will provide important checks and balances on the levels of each.

If these expectations about staff wages, competition, or consumer demand in child care do not hold, however, then traditional economic assumptions about the relationship between cost and quality may fail. For example, if child care staff members are so committed to caring for children that they are willing to work for less-than-market wages, then child care costs may be low, no matter the quality of care. In-kind donations can also keep costs low, no matter the quality. If parents and purchasers of care do not recognize and demand good-quality child care, then no incentive exists for many providers to offer it, no matter what it costs. Thus, if expectations fail, then even a highly competitive child care market will not assure provision of good-quality services at the lowest possible prices. These complexities make it imperative to examine how the child care market operates in order to inform public policy concerning child care financing.

This article relies primarily upon two recent studies, the Cost, Quality, and Child Outcomes in Child Care Centers study<sup>1</sup> and the Economics of

---

---

---

---

---

Family Child Care study,<sup>2,3</sup> to describe the relationship between cost and quality in center-based and family child care programs. The first section of the article describes how quality child care is defined and measured, summarizes the quality of child care in the United States today, and examines parents' understanding of child care quality. The next sections of the article describe child care operating costs, revenues, and fees, and their relationship to quality. The article concludes with recommendations for policy and practical action.

### Child Care Quality

For 20 years, developmental psychologists have investigated the impact of child care attendance on children's development. Initially, researchers sought to determine if care by someone other than a parent harms children, and they found that children's long- and short-term development does not appear to be harmed by child care.<sup>5</sup> However, this research also suggests that the quality of child care varies widely and that children's outcomes differ depending upon the quality of their child care experiences.<sup>1,7</sup>

There is today considerable agreement among developmental researchers on the aspects of child care quality that are directly linked to positive outcomes for children. Quality child care is primarily defined by two highly interrelated components: *process quality*, which captures the experiences children have in child care, and *structural quality*, which captures the aspects of the child

their exposure to materials and activities that enhance learning. Process quality is considered basic to child care quality because it is most directly related to children's behavior in the child care environment.<sup>2,11</sup> Quality child care means that caregivers respond to children's social behaviors in a sensitive and positive fashion, are involved in their play and learning activities, and are not harsh in their management of children's behavior. Children in high-quality care spend their child care hours in socially appropriate play with adults and peers,<sup>5</sup> and they explore materials in ways that fit their age and developmental stage.<sup>12</sup> Children in such settings have higher scores on cognitive, social, and language measures of development.<sup>1</sup>

### Structural Quality

Structural quality refers to objective aspects of the child care environment that are often regulated by government, such as the number of children cared for in a group and by each caregiver (adult-child ratio), caregiver formal education and specialized training in child development or related fields, caregiver experience, and aspects of the facility that houses the child care programs, such as the amount of floor space per child. Optimal structural conditions create opportunities for more favorable process conditions to occur in child care settings, and these, in turn, lead to more positive child outcomes.<sup>11</sup> For example, when an adult is responsible for providing care to a smaller group of children, she is more likely to tailor care to the particular needs of each child.<sup>2,5,13</sup> Adults who have more formal education and specialized training tend to use this knowledge when they interact with children, and this enables them to be more sensitive and responsive in their caregiving.<sup>1,2,5,9,13</sup> Children cared for under these conditions have more positive developmental outcomes, that is, they are more likely than children cared for under less optimal

---

***The quality of child care varies widely and children's outcomes differ depending upon the quality of their child care experiences.***

---

care environment that are often regulated by government.<sup>1,2,8,9</sup> In addition, research indicates that the adult work environment indirectly influences the children in care because it is closely tied to both caregiver behavior and to caregiver longevity in child care.<sup>9,10</sup> Table 1 describes these aspects of child care quality and how they are measured in most studies, including the studies reported in this article.

### Process Quality

Process quality refers primarily to how children experience child care—their interactions with the adults who care for them and

Table 1

<b>Definition and Measurement of Quality in Child Care Programs</b>			
<b>What Was Measured and How</b>	<b>Areas of Comparison</b>		
	<b>Process Quality</b>	<b>Structural Quality</b>	<b>Adult Work Environment Quality</b>
<b>Aspects of Child Care Program</b>	<p>Interactions between child and caregiver, including caregiver sensitivity, harshness, detachment, and involvement with children</p> <p>Caregiver's attitudes toward children</p> <p>Presence of learning activities</p> <p>Health and safety aspects of the child care environment</p> <p>Presence of appropriate furnishings, equipment, and curricular materials</p>	<p>Group size</p> <p>Adult-child ratio</p> <p>Caregiver's previous experience in caring for children</p> <p>Caregiver's formal education</p> <p>Caregiver's specialized training in child care</p>	<p>Child care director's and caregiver's salary and benefits</p> <p>Annual turnover rates of caregivers and directors</p> <p>Caregiver's work satisfaction</p> <p>Caregiver's work commitment</p> <p>Caregiver's perception of job stress</p>
<b>Techniques Used to Measure Quality</b>	<p>Observations of children, caregivers, and child care environment</p>	<p>Observation</p> <p>Questionnaires</p> <p>Interviews</p> <p>Review of personnel records</p>	<p>Interviews with or questionnaires to child care program directors or teachers</p>
<b>Instruments Used to Measure Quality</b>	<p>Early Childhood Environment Rating Scale (ECERS)</p> <p>Infant/Toddler Environment Rating Scale (ITERS)</p> <p>Caregiver Interaction Scale</p> <p>UCLA Early Childhood Observation Form</p> <p>Family Day Care Rating Scale</p>	<p>Observations of activities in preschool (for group sizes and ratios)</p>	<p>Staff questionnaire</p>

Source: Harms, T., and Clifford, R.M. *Early childhood environment rating scale*. New York: Teachers College Press, 1980; Palacios, J., and Lera, N. Observation in preschool. Unpublished rating scale, 1991; Harms, T., Cryer, D., and Clifford, R.M. *Infant/toddler environment rating scale*. New York: Teachers College Press, 1990; Howes, C., and Stewart, P. Child's play with adults, toys and peers: An examination of family child care influences. *Developmental Psychology* (1987) 23:423-30; Stipek, D., Daniels, D., Galuzzo, D., and Milburn, S. Characterizing early childhood education programs for poor and middle-class children. *Early Childhood Research Quarterly* (1992) 7:1-19; Harms, T., and Clifford, R.M. *Family day care rating scale*. New York: Teachers College Press, 1989.

structural quality conditions to be developmentally on target. In addition, adults with more formal education and training (rather than just more experience working with children) are more likely to provide age-appropriate learning experiences for children.<sup>2,3,9,13</sup>

While, in theory, child care programs could score well on a measure of one aspect of structural quality and score poorly on another, in practice in the United States, elements of structural quality are highly associated with one another. For example, in theory, a very well-educated and well-trained staff person might be able to manage a large group of children more effectively than a less-qualified staff person, but this pattern is seldom found in the United States. In most instances, child care programs that hire well-trained staff members also tend to have small groups and high adult-child ratios.

Because children of different ages need different levels of care and degrees of supervision, recommended group sizes and adult-child ratios differ by age group. For instance, quality programs for infants and toddlers (up to age two) generally have smaller group sizes and a higher adult-child ratio than pro-

---

***Child care programs that hire well-trained staff members also tend to have small groups and high adult-child ratios.***

---

grams serving preschool-age children, meaning that more staff members are needed (see Box 1). As will be discussed below, personnel costs are the single largest expense in a child care program's budget. Therefore, altering quality features such as staffing ratios can have an enormous effect on a child care program's cost and profitability.

### **The Adult Work Environment**

Salary, benefits, and working conditions affect caregiver behavior and longevity in child care, and so indirectly they influence children's experience in the care setting.<sup>5,9</sup> For example, providers who are committed to their jobs, satisfied, and compensated adequately are more sensitive to the children,

more responsively involved, and more nurturant.<sup>2</sup> Centers that offer higher wages and better benefits can attract and retain a better-trained staff. Caregivers who earn more are less likely to leave their center jobs<sup>9,14</sup> or to close their family child care homes.<sup>15</sup> Staff turnover is an important indicator of poor-quality care because children who lose their regular caregivers tend to experience negative outcomes such as poor language and social development<sup>9</sup> and, in at least one study, increased aggression.<sup>16</sup>

### **The Quality of U.S. Child Care Today**

A consistent and dismaying profile of the quality of child care in America emerges from two recent, in-depth, multisite observational studies on child care centers and family child care homes,<sup>1,2</sup> as well as from earlier studies.<sup>11,15</sup> (The article by Hofferth in this journal issue provides additional data on trends in child care quality based on large national surveys.)

The Cost, Quality and Child Outcomes in Child Care Centers (CQO) study, conducted in 1993–94, examined 401 child care centers representing 749 classrooms in California, Colorado, Connecticut, and North Carolina.<sup>1</sup> Classroom observations and interviews with center directors and staff members provided data on center characteristics, program quality, and staff qualifications, commitment, and compensation issues. About 826 children were also individually assessed to learn the effects of program characteristics on children's development.

In 1991–92, the Study of Children in Family Child Care and Relative Care examined care provided by 226 family child care providers in communities in California, North Carolina, and Texas. The study also involved 820 mothers and 225 of their children.<sup>2</sup> Observations and interviews with mothers and providers yielded data on family child care home characteristics, program quality, and other issues.

### **The Quality of Center-Based Care**

The CQO study indicated that about 86% of the centers in the study provided mediocre or poor-quality services. Only 14% of the centers surveyed met levels of process quality that were high enough to support children's development. Twelve percent were

## Box 1

### Accreditation of Child Care Programs

Several voluntary systems exist nationally to establish higher-quality standards than are required by law for both child care centers and family child care homes.

#### CHILD CARE CENTERS

One of the most widespread accreditation systems for centers is that created by the National Association for the Education of Young Children (NAEYC). In this system, center-based programs conduct self-evaluations involving staff and parents. Professional validators from NAEYC conduct visits to determine whether or not standards have been met, and if they have, programs are accredited for three years. Standards are designed for programs that serve children from infancy through age eight in centers caring for 10 or more children; school-age programs are eligible if a majority of children are eight years old or younger. As of January 31, 1996, there were 4,523 accredited centers in the United States and 16 foreign countries, and another 8,815 centers were in the process of becoming accredited.

Initially developed in 1984, the NAEYC criteria for accreditation were based on research and professional consensus. The criteria include guidelines for staff-child interactions; curriculum content; parental involvement; staff qualifications and training; administration; staffing patterns (group size and adult-child ratios); physical environment; health and safety; and nutrition and food service. As an example, NAEYC standards for group size and adult-child ratio are as follows:

Age of Children	Number of Children per Group	Adult-Child Ratio
0 to 12 months	6 to 8	1:3 to 1:4
12 to 24 months	6 to 12	1:3 to 1:4
2 years	8 to 12	1:4 to 1:6
3 years	14 to 20	1:7 to 1:10
4 to 5 years	16 to 20	1:8 to 1:10
6 to 8 years	20 to 24	1:10 to 1:12
9 to 12 years	24 to 28	1:12 to 1:14

#### FAMILY CHILD CARE HOMES

In 1988, the National Association for Family Day Care (now the National Association for Family Child Care, or NAFCC) began a program of voluntary accreditation for family child care homes. The process includes self-evaluation as well as external validation of aspects of program operation, including health and safety, nutrition, indoor and outdoor play environments, interactions, and professional responsibility. Accreditation of family child care homes is less common than accreditation of child care centers. As of early 1996, only 1,083 providers were accredited, and another 272 were in the process of becoming accredited. All but six states had accredited providers. These six states were Louisiana, Mississippi, Nevada, New Mexico, South Carolina, and South Dakota.

The National Association for Family Child Care is working with the Family Child Care Project at Wheelock College, Boston, MA, and a national network of providers, parents, and others to develop a new accreditation process and instrument, scheduled to replace the current system in 1998.

judged to be of such poor quality that children's basic health and safety needs were only partly met and few learning experiences were provided. Quality in the rest (74%) of the centers was judged mediocre. Care for infants and toddlers was particularly poor. Only 8% of classrooms serving infants were rated high quality; fully 40% were judged low quality. At least half the infant and toddler classrooms observed had poor general health practices.

Results for structural quality in the CQO study revealed that 28% of the teaching staff had college degrees, 46% had some college course work, and 26% had only a high school education or less. Not all of this training was in the child care field: of those staff members with a high school education or less, for example, 25% had never had any training in early childhood education.

The average group size was 8 children for infants and toddlers, and 14 for preschoolers, within acceptable limits recommended by the National Association for the

quality than centers that were not accredited (see Box 1).

The CQO study also assessed the adult work environment. Data on staff wages are discussed in the section about the costs of child care programs, but staff turnover (which is related to wages) is discussed here. Annual staff turnover rates were 37%, consistent with rates in multisite child care studies conducted in 1988<sup>9</sup> and 1992.<sup>14</sup> This is almost four times the annual turnover rate of 9.6% reported by all U.S. companies in 1992, and it is more than double the 12% turnover rate reported by employers such as government, school, and other nonprofit organizations.<sup>14</sup>

Finally, the CQO study indicated no overall differences in quality between nonprofit and for-profit centers except in North Carolina, where state licensing standards permitted low staff-child ratios and low staff training requirements. In earlier studies, care in nonprofit centers has sometimes been rated as being of higher quality than care in for-profit centers,<sup>9,13</sup> but the CQO study found instead that quality varied more within nonprofit and for-profit sectors than between them. Church-affiliated nonprofit centers were of lower quality than other nonprofits. In addition, for-profit centers that were part of national systems seemed to have relatively higher quality than other for-profit centers. These differences in quality among centers were associated with differences in sources of revenues. Centers dependent upon parent fees as their primary source of revenues tended to provide lower quality care. Centers with additional revenue sources that were designed to enhance quality did indeed offer higher-quality services. These differences suggest that financing mechanisms that rely solely on parent fees are unlikely to lead to improvements in the quality of child care.

---

### ***Financing mechanisms that rely solely on parent fees are unlikely to lead to improvements in the quality of child care.***

---

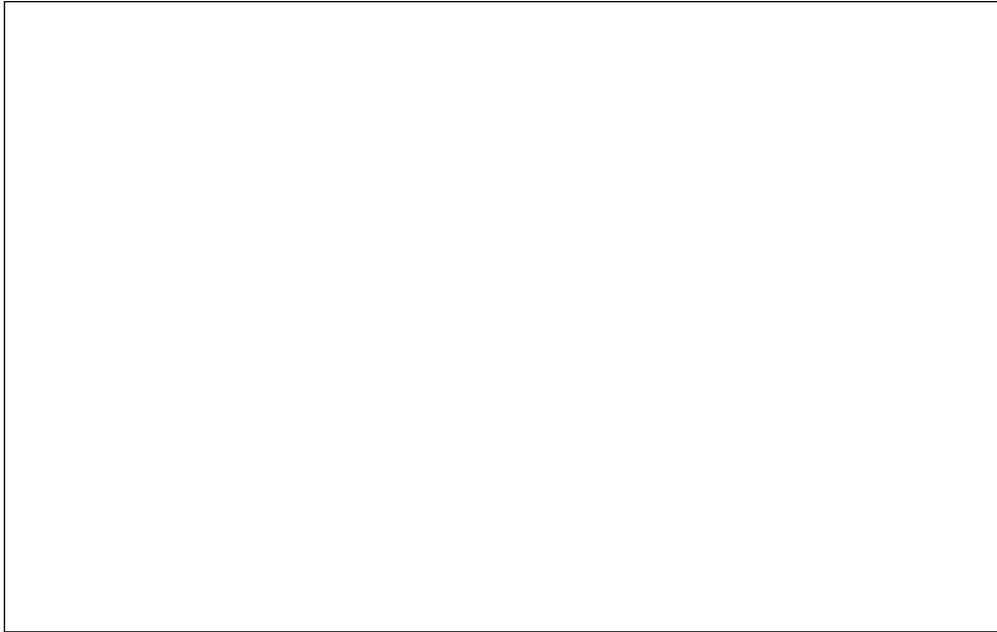
Education of Young Children (NAEYC), the premier professional organization for staff in early childhood programs. The average ratio was one adult for every six preschoolers, and one adult for every three or four infants—again within acceptable limits recommended by NAEYC.

Levels of staff education, group size, and ratios all varied across the four states in the study, perhaps reflecting the variation in child care regulations across the states. For example, the state that had no requirement for staff experience in its regulations (North Carolina) had the lowest average level of teachers' prior experience.

Some centers met additional standards beyond those required for state licensing, and these tended to provide higher-quality services. For example, centers that were accredited by the NAEYC were of higher

#### **The Quality of Family Child Care**

Like care in centers, care in family child care homes varies greatly in quality, but overall, is mediocre on measures of process quality. The 1991–92 Study of Children in Family Child Care and Relative Care rated only 9% of homes surveyed as good quality; 56% provided care considered adequate or custodial; and a full 35% were judged to be inadequate.<sup>2</sup> The average provider was rated as



nonresponsive or inappropriate in interactions with the children close to half the time.

With respect to structural quality measures, family child care providers had relatively low levels of formal education and experience in child care. Only 17% of those surveyed had college degrees, and 36% had a high school education or less. Most providers (98%) did have some specialized training in child care, often through workshops or child care conferences outside the formal education system. As was true in center-based care, providers with more formal education were rated as more sensitive and less detached, and were observed to be more responsive in their interactions with children in their care.

The groups in family child care averaged four children but were larger for toddlers and preschoolers than for infants. Fully 36% of homes had at least one infant present. The typical family child care home had a lone caregiver and a staff-child ratio of about one to three.

Results suggest that family child care providers who had chosen child care as a career tended to provide better-quality care than did those who viewed it as interim work while their own children were young or who felt obliged to provide care for a relative. The professionally oriented providers tended to care for larger groups of children (for example, three to six children rather than

one or two), to have slightly lower staff-child ratios, and to be regulated—all factors associated in the study with better process quality scores.

In addition, the study gathered data on the family child care work environment. Providers who were better compensated and reported higher levels of job commitment were more sensitive toward the children in their care. Overall, however, family child care providers remain in the field for a relatively short time. The typical provider had only one year of experience as a provider; half had experience of three years or less.

## Do Parents Choose Child Care on the Basis of Quality?

Parents want the best for their children, and most undoubtedly try to choose a high-quality child care arrangement over a mediocre or poor one. Several research studies suggest, however, that parents and researchers sometimes have conflicting views about what aspects of a child care program are associated with quality. Some studies suggest that parents place cost and convenience above warm interactions with caregivers,<sup>15,17</sup> while others find that parents endorse the importance of the nature of the interactions between the child and the caregiver (process quality).<sup>18-21</sup> Parents seem to pay little attention to the structural indicators of quality such as regulatory status and

caregiver training. For example, an Illinois study indicated that more than 40% of the low-income parents surveyed did not consider it important if their child's provider were licensed,<sup>22</sup> and the Study of Family Child Care and Relative Care found that, when asked about their reasons for selecting their current provider, mothers almost never mentioned formal credentials such as education and licensing.

In the CQO study,<sup>1</sup> parents and researchers rated the quality of child care provided for the children. While parents said they valued the process characteristics measured by the researchers, they consistently overestimated the quality of care their own children received. That is, parents and researchers agreed about what was important in a child care setting, but the two groups saw the same settings differently: parents perceived care as high in quality while, on average, researchers rated the quality as mediocre. These differences between parent and observer quality scores were greater for aspects of care that parents were unable to observe, such as nap time, or for aspects that they valued more highly.

These findings—general agreement between researchers and parents on the aspects of care that are important but inconsistency in ratings of care—suggest that parents are not well-informed consumers and do not accurately judge child care quality. This has implications for child care financing because parents are usually the only per-

assurance that their extra dollars will purchase higher-quality care.

## Child Care Operating Costs, Revenues, and Fees

It is important to understand costs, revenues, and fees in order to understand competition and profitability in the child care market. How family child care homes and for-profit and nonprofit centers derive and spend their revenues has important implications for whether or not particular sectors in the market can or do enjoy any competitive advantages. And, of course, an understanding of these issues is necessary before the relationship between costs and quality can be understood.

Only a few researchers have examined the operating costs of child care centers<sup>23–26</sup> or of family child care homes despite the importance of these costs.<sup>3</sup> Data from the CQO study and the Economics of Family Child Care (EFCC)<sup>27</sup> study summarized below indicate that (1) parent fees comprise the largest single source of revenues for child care programs; (2) personnel costs are the largest single cost in child care programs; (3) the cost structures in family child care homes and centers differ, but the fees and costs to parents are similar across the two settings for preschoolers, while infant fees are lower in family child care homes; (4) differences exist in revenue sources and cost allocation across for-profit and nonprofit centers; (5) parents benefit from hidden subsidies that hold down the costs of child care.

## Defining and Measuring the Cost of Child Care

The cost of child care can be viewed from the perspective of the provider, the parent, and society. From a societal perspective, it is important to estimate the value of all resources used in providing child care. Child care is provided in a mixed market of for-profit, nonprofit, and publicly operated centers, and in licensed and unlicensed child care homes. Tax benefits, philanthropic contributions, and government subsidies reduce costs and fees paid by some parents so that fees may not reflect the actual cost of providing the care. (See the article by Stoney and Greenberg in this journal issue for a description of current subsidy programs.)

---

***Even parents who are willing to pay more for child care have no assurance that their extra dollars will purchase higher-quality care.***

---

sons responsible for selecting a child care arrangement. These study findings suggest that it cannot be assumed that parents will purchase high-quality child care simply because they want the best for their children. As is discussed below, high-quality care costs only a little more than mediocre care, so parents cannot use the cost of care as an indicator of its quality. Even parents who are willing to pay more for child care have no

Subsidies can be classified as either supply subsidies or demand subsidies. *Supply subsidies*—donations, forgone earnings of staff, the U.S. Department of Agriculture's Child and Adult Care Food Program—are contributions that reduce the expended costs incurred by centers and family child care providers and, thereby, indirectly affect fees charged by lowering expenses. Because consumers do not know about their providers' finances, they may be unaware of the supply subsidies from which they probably derive considerable benefits through lower fees.

*Demand subsidies* directly affect what parents pay for services. Demand subsidies include direct payments for specific children, such as state or federal reimbursement to centers, or for vouchers, United Way lump sum payments for low-income children, and the Child and Dependent Care Tax Credit. By reducing the fees for services to parents, demand subsidies can affect the level of quality or the amount of service they are willing to purchase.

Table 2 gives estimates from the CQO study of the costs of child care, breaking costs into three categories: (1) Expended center costs, which are the cash costs incurred by providers to produce services. These equal labor, occupancy, food, other operating costs, and overhead; (2) cost with in-kind donations, which is an estimate of society's cost, including donations from individuals and agencies for facilities, volunteer services, equipment, materials, food, and so on; and (3) the full cost of care, which is a more inclusive measure of the value of all resources used to provide child care services, made up of expended center costs plus donations plus the forgone earnings of child care staff.

Some of these subsidies (for example, donations and forgone earnings of child care providers) are hard to estimate. For instance, donated goods and services may not have a market price. Where possible, the CQO researchers attempted to evaluate the market value of donations to centers, such as labor, space, and utilities.

The CQO researchers also contend that the low wages of providers constitute supply subsidies—in effect, they comprise a labor

donation, as providers are forgoing the higher wages they could presumably earn in another occupation based on their education, gender, age, and other characteristics. A considerable amount of economic literature argues that, because nonprofit workers value the social benefits provided by their work, they are willing to donate labor to nonprofits,<sup>28–33</sup> and one author has suggested that child care workers do this whether they work in nonprofit or for-profit child care programs. The CQO researchers contend that, like any donation, estimates of the forgone earnings of providers should, therefore, be included in calculating the full cost of providing child care. They calculated forgone wages by estimating the wage a provider could earn in another occupation, based on demographic characteristics (the provider's forecast wage), and subtracting what the provider actually earned in child care.<sup>34</sup>

Measuring the magnitude of forgone wages is subject to error. Unmeasured characteristics of the worker (such as negative personality traits) might explain the worker's lower wages and mean that any particular child care worker actually could

---

***As current child care workers leave their jobs, they are being replaced with a less well-educated work force.***

---

not earn more in a different job. Or, if child care employees accept low wages because they get nonmonetary rewards (such as enjoyment from working with children) from their jobs, then their low wages are a function of worker preferences, and one could argue that no forgone wages exist.

Undoubtedly, enjoyment of the work does motivate many of the women who provide child care for relatively low wages. For instance, in the CQO study, one of the main reasons center staff members cited for working in the child care field was the opportunity to work with children. However, the high staff turnover rates in child care described above suggest that an initial willingness to work for low wages may be eventually outweighed by negative aspects

Table 2

	Means by State and Sector											Dollar Total	Percentage of Full Cost		
	California		Colorado		Connecticut		North Carolina		Nonprofit	For-Profit	Nonprofit			For-Profit	
	Nonprofit	For-Profit	Nonprofit	For-Profit	Nonprofit	For-Profit	Nonprofit	For-Profit							
<b>Cost Estimates</b>															
Full cost of care	\$ 548	\$ 509	\$ 551	\$ 532	\$ 788	\$ 668	\$ 420	\$ 323	\$ 548						100 %
Less staff forgone earnings	106	99	135	143	85	118	89	70	106						19
Cost with in-kind donations	449	408	433	401	708	551	331	253	442						82
Less in-kind donations	58	10	45	8	93	50	45	4	39						7
Expended center costs <sup>a</sup>	391	401	389	393	615	501	286	252	403						74
Total revenue	\$ 404	\$ 426	\$ 402	\$ 401	\$ 627	\$ 517	\$ 296	\$ 277	\$ 420						77 %
Less cash contributions	163	14	178	64	283	62	128	54	118						22
Center revenue from parent fee payments <sup>b</sup>	242	412	224	337	344	455	168	223	302						55
Less income tax credit	33	46	29	39	33	52	27	31	37						7
Net parent cost	209	366	195	298	312	402	141	192	265						48
<b>Maximum Monthly Fees</b>															
Infants	\$ 517	\$ 562	\$ 464	\$ 474	\$ 630	\$ 632	\$ 289	\$ 310	\$ 454						CT>CA>CO>NC
Preschool	368	404	338	357	487	492	248	279	372						CT>CA>CO>NC P > NP

<sup>a</sup> Elements may not add up to totals and percentages may differ slightly from actual because of rounding.

<sup>b</sup> This estimate is greater than the maximum credit for an individual family of 20% x \$2,400 or \$40 because full-time equivalent enrollment includes part-time children and two children representing one full-time equivalent can pay more than \$40 per month.

<sup>c</sup> CT=Connecticut; CA=California; CO=Colorado; NC=North Carolina; P=For-profit centers; NP=Nonprofit centers. Outcomes of F-tests listed were statistically significant at the p<.05 level, at least (that is, likely to have occurred by chance no more than five times out of 100).

Source: Helburn, S., ed. *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research on Economics and Social Policy, University of Colorado, 1995.

Table 3

Budget for a Typical Child Care Center, Means per Child per Month						
Item	Cost					
	Nonprofit Centers		For-Profit Centers		All Centers	
	Dollars	Percentage of Total	Dollars	Percentage of Total	Dollars	Percentage of Total
Labor <sup>a</sup>	\$ 331	78.9 %	\$ 239	61.8 %	\$ 285	70.3 %
Occupancy <sup>a</sup>	31	7.4	78	20.2	55	13.8
Food <sup>a</sup>	21	4.9	16	4.3	19	4.6
Other operating <sup>a</sup>	28	6.7	40	10.4	34	8.6
Overhead	9	2.0	11	2.9	10	2.5
Total cost <sup>b</sup>	\$ 420	100.0 %	\$ 386	100.0 %	\$ 403	100.0 %
In-kind donations <sup>a</sup>	\$ 60	14.0 %	\$ 17	4.0 %	\$ 39	10.0 %
Forgone earnings	104	25.0	108	28.0	106	26.0
Full cost <sup>c</sup>	\$ 584	139.0 %	\$ 511	132.0 %	\$ 548	136.0 %
	Revenue					
	Dollars	Percentage of Total	Dollars	Percentage of Total	Dollars	Percentage of Total
Parent fees <sup>a</sup>	\$ 244	56.5 %	\$ 357	88.2 %	\$ 302	72.3 %
Public fees <sup>a</sup>	88	20.4	38	9.4	63	14.9
USDA CACFP (food) <sup>a</sup>	13	3.0	3	0.6	8	1.8
Other public funds <sup>a</sup>	46	10.7	0	0.0	23	5.3
Other private funds <sup>a</sup>	41	9.4	7	1.8	24	5.6
Total Revenue <sup>b</sup>	\$ 433	100.0 %	\$ 405	100.0 %	\$ 420	100.0 %
Surplus or Profit	\$ 13	3.0 %	\$ 18	4.5 %	\$ 16	3.7 %

<sup>a</sup> Significant difference between for-profit and nonprofit sector:  $p < 0.001$ .

<sup>b</sup> Elements may not add up to totals and percentages may differ slightly from actual because of rounding.

<sup>c</sup> Significant difference between for-profit and nonprofit sector:  $p < 0.01$ .

Source: Helburn, S., ed. *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research on Economics and Social Policy, University of Colorado, 1995.

of the job. In addition, as more women enter the general work force, their personal preferences concerning the type of work they do may shift away from child care, and they may also learn they can earn more in other jobs. The consequence for the field appears to be that, as current child care workers leave their jobs, they are being replaced with a less well-educated work force.<sup>9,14</sup>

For these reasons, estimates of the forgone earnings of providers are included in calculating the full cost of providing child care in the CQO study, the EFCC study, and in this article, although a more conservative approach would be to consider the full cost-of-care estimates reported here as upper limits.

## Center Finances

Tables 2 and 3 summarize key results of the CQO study concerning the costs of providing child care in centers. The tables compare results by region, as well as by profit sector, that is, private for-profit and private nonprofit (including publicly operated centers).

### Expended and Full Costs

Table 3 reports monthly budgets showing average expended costs and revenue sources for all centers, and for-profit and nonprofit centers. Total expended costs for all centers averaged \$403 per month. Labor costs represented 70% of costs, occupancy 14%, food 5%, other operating expenses 9%, and overhead 2%. These percentages are roughly comparable to findings from earlier studies.<sup>4,35</sup> When donations and

forgone earnings were considered, the full cost of care rose to \$548 per month or 136% of total expended cost, with forgone earnings representing 26% of expended costs, volunteer time about 2%, occupancy subsidies 7%, and other donations 1% of expended costs.

Although for-profit and nonprofit centers did not differ in the total cost per child, they did differ in how they allocated costs. Nonprofit centers spent significantly more than for-profit centers on labor and food; for-profit centers spent significantly more than nonprofit centers on facilities and other operating expenses. For instance, labor costs represented 79% of nonprofit center costs, but only 62% of for-profit center costs; occupancy costs represented 7% of nonprofit center expended costs, but 20% of for-profit center costs.

These differences in the composition of costs by profit sector reflect significant differences in receipt of in-kind donations between sectors. Most of the donations to nonprofit centers (70%) were in the form of subsidized facilities (for example, the use of space in a

---

***Although for-profit and nonprofit centers did not differ in total revenue per child per month, nonprofit centers had much more diversified revenue streams than for-profit centers.***

---

church building), whereas for-profit centers rarely received occupancy donations. Despite subsidization of facilities, for-profit centers still had higher occupancy costs, indicating that nonprofit centers apparently used lower-quality space than for-profit centers. (See Appendix B for additional information about the costs of child care facilities.)

■ **Regional Differences** Expended costs varied by state (see Table 2). Connecticut had significantly higher costs and North Carolina significantly lower costs than the other states. Costs in California and Colorado were close to the average. These tendencies held true when cost-of-living adjustments were made for differences in consumer prices in the four states, although the range of difference diminished.

Regional differences in the full cost of care reflect differences in expended costs, donations, and forgone earnings. The full cost of care was also higher in Connecticut than in the other three states and lower in North Carolina, reflecting regional differences in both expended costs and donations. Larger subsidies were found in Connecticut than in other states, except for forgone wages, which were highest in Colorado and lowest in Connecticut.

#### Revenues, Profits, and Fees

Table 2 also describes center revenues, breaking out *revenue gained from parent fee payments*, which equals center total revenue minus other revenue sources (for example, state reimbursement, public and private grants, cash donations, other income), and *net parent cost*, which equals the average parent fee after deducting a 20% income tax credit.

Although for-profit and nonprofit centers did not differ in total revenue per child per month, they did differ in the sources of those revenues. As indicated in Table 3, nonprofit centers had much more diversified revenue streams than for-profit centers. Compared with nonprofit centers, for-profit centers were highly dependent on parent fees, which comprised 88% of total revenue compared with 57% for nonprofit centers. For-profit centers, which historically have received fewer public dollars, received little revenue from state fee reimbursement, USDA food grants, or other public grants. These sector differences are even more dramatic when church-affiliated centers are separated from other nonprofit centers. Although these results are not listed in Table 3, parent fees represented 83% of the total revenue for church-affiliated centers, which is very similar to the for-profit profile. In other words, within the nonprofit sector, the independent nonprofit and publicly operated centers that serve subsidized children rely least on parent fees.

For the whole sample, the rate of profit or surplus on revenue was low, averaging 3.7%. By comparison, corporate profit on revenue for the nation as a whole averaged about 9% in recent years.<sup>36</sup>

Table 2 indicates that the mean maximum monthly fee was \$454 for full-time

infants and \$372 for full-time preschool children. Fees were highest in Connecticut and lowest in North Carolina. When fees were adjusted to account for regional differences in the cost of living, these differences in fees across states diminished somewhat. Fees charged by for-profit centers remained higher than those charged by nonprofit centers.

#### Costs to Society, Centers, and Parents

Table 2 illustrates how the burden for child care costs is shared by society, providers, and parents. On average, as mentioned above, the full cost of care was \$548 per child per month; center expended costs were \$403 per child per month or 74% of full cost; and net parent costs were \$265 per child per month or 48% of the full cost of care.

Table 3 shows that parent fee payments made up 72% of total revenues, or an average of \$302 of total revenues of \$420 per month. Net parent cost is the cost to the parent after deducting a 20% federal income tax credit.<sup>37</sup> In for-profit centers, overall, parent fees represented almost 90% of center total revenue and 70% of the full cost of care. After deducting the child care tax credit, parent fees amounted to 62% of for-profit full cost, but in nonprofit centers, because a smaller percentage of parents paid full tuition, parents paid on average about 40% of the full cost of care (not depicted in tables).

In other words, when only the revenues coming into centers each month are considered, parents are shouldering most of the burden, especially parents whose children are in for-profit child care programs. When all subsidies (including forgone wages) are considered, however, the parental share declines to about half of the full cost of care.

#### Importance of Center Size

The CQO study corroborated earlier findings<sup>25</sup> that economies of scale exist in child care. Centers that had longer hours of operation, operated closer to capacity, or served larger numbers of children had lower expended costs per child per hour with no apparent ill effects on quality of care. When the study controlled statistically for the effects of operating in different states, results

indicated that labor cost, total cost, and total revenue per child were significantly higher in centers serving fewer than 40 children on a full-time basis than in centers serving more than 40.

#### Wages and Forgone Earnings

In 1993, the mean wages for teaching staff were as follows: \$7.22 per hour for teachers, \$5.70 per hour for assistants, and \$11.33 for administrative directors.<sup>1</sup> Significant regional differences reflect differences in cost of living and in labor market conditions: Wages in California and Connecticut were comparable and were \$2.50 per hour higher than in Colorado and \$3.00 per hour higher

---

***When all subsidies (including forgone wages) are considered, the parental share declines to about half of the full cost of care.***

---

than in North Carolina. Adjustments for differences in labor market conditions in the four states suggested that Connecticut child care jobs pay higher wages relative to other jobs in Connecticut hiring people with similar characteristics, and this may help explain the higher quality observed in Connecticut centers. Based on a comparison of the CQO study and the earlier National Child Care Staffing Study (NCCSS),<sup>9</sup> real wages for child care staff members do not appear to have changed significantly since 1988, when the NCCSS collected wage data in different but comparable regions of the country.

The CQO study estimated forgone earnings. On average, all categories of staff in all states earned less than their forecast wage. Fully 93% of teachers and assistants earned less in child care than their counterparts earned in other occupations and industries. Teachers, on average, earned \$5,238 per year less in child care than they could earn in other professions, given their education, racial and ethnic status, gender, and age. Forgone earnings for assistants, while lower in absolute terms (\$3,582), were proportionately higher than for teachers. There was wide variation in forgone wages for administrators, but many administrators (32% of those in the study) were earning their market wage.

Table 4

Income and Costs per Year, and Other Characteristics for Family Child Care Providers, in 1993 Dollars					
	All Providers			20% of Providers with Highest Child Care Income	
	Annual per Provider	Percentage <sup>a</sup> of Gross Income	Annual per Full-Time Equivalent Child	Annual per Provider	Annual per Full-Time Equivalent Child
<b>Number of Observations</b>	133			27	
<b>Gross Income from Child Care</b>	\$ 19,242	100.0 %	\$ 4,120	\$ 38,062	\$ 4,806
<b>Less Cost</b>					
Assistants and substitutes	1,874	9.7	401	4,420	558
Food for children	2,376	12.3	509	3,122	394
Toys, materials, equipment, equipment repair	655	3.4	140	965	122
Mileage	255	1.3	55	528	67
Household supplies	691	3.6	148	846	107
Advertising, office expenses, license fees	294	1.5	63	517	65
Dues, tuition, entertainment, gifts, professional travel	262	1.4	56	573	72
Accountant, lawyer, insurance	218	1.1	47	417	53
Repairs, remodel, furniture, loan interest, other expenses	1,259	6.5	270	2,134	269
Utilities <sup>b</sup>	1,012	5.3	217	1,500	189
<b>Total Cost</b>	\$ 8,895	46.2 %	\$ 1,905	\$ 15,023	\$ 1,896
<b>Net Provider Income</b>	\$ 10,347	53.8 %	\$ 2,215	\$ 23,039	\$ 2,910
<b>Other Total Benefits from Child Care Provision<sup>c</sup></b>	\$ 2,517	13.0 %	\$ 539	\$ 2,700	\$ 341
<b>Provider Income and Benefits from Child Care</b>	\$ 12,864	66.9 %	\$ 2,755	\$ 25,883	\$ 3,262
<b>Other Provider Information</b>					
Mean full-time equivalent children <sup>d</sup>	4.67			7.92	
Staff ratio <sup>e</sup>	3.87			4.46	
Quality index <sup>e</sup>	0.26			0.72	
Percentage with own child in program	55			41	
Family income	\$ 39,420			\$ 47,950	
Age of provider	40			41	
Weekly full-time preschool fee <sup>f</sup>	\$ 74			\$ 88	
<sup>a</sup> Percentages may differ slightly from actual because of rounding. <sup>b</sup> Utilities expenditures based on the time/space formula allowed by IRS are included as a proxy for facilities expenses related to child care provision. Assuming that the provider does not use specialized facilities for child care, housing costs equal the extra costs for maintenance, replacement, and utilities created by child care provision. <sup>c</sup> Includes tax benefit minus Social Security taxes plus value of own child care. <sup>d</sup> Significant difference between all providers and 20% of providers with the highest child care income: $p < 0.001$ . <sup>e</sup> Significant difference between all providers and 20% of providers with the highest child care income: $p < 0.05$ . <sup>f</sup> Significant difference between all providers and 20% of providers with the highest child care income: $p < 0.01$ .					

### Family Child Care Finances

Tables 4 and 5 report results from the Economics of Family Child Care (EFCC) study,<sup>3</sup> which interviewed 133 family child care providers in California, North Carolina, and Texas who had also participated in the study on Quality in Family Child Care and Relative Care. The methods used to estimate costs and income in family child care were comparable to those used for estimating center-based costs and revenues, with modifications where necessary to take into account that, because family child care providers work at home, work and family time (and expenses) may sometimes overlap.

#### Provider Costs and Income

Table 4 compares mean income, costs and other provider characteristics for the whole sample and for the 20% of family child care providers with the highest child care income.<sup>38</sup> The table reveals that family child care providers had low average earnings, and that serving a larger number of children is generally in the interest of both providers and their clientele. On average, all providers served about five children; the higher-income group served about eight. Average net provider income and benefits (including savings generated by not working outside the home, such as not needing to pay for child care for their own children) was \$12,864 per year for all providers, compared with \$25,833 for the higher-income group. For the high-income group, annual child care income approaches a living wage, and quality of care is significantly higher than for the sample as a whole. These higher-income child care providers spend more per child than the average provider on assistants and some administrative expenses, but otherwise spend less per child than the average provider.

Total costs of providing care represent 46% of the provider's gross income from child care. The largest categories of spending are for assistants (9.7% overall, but assistants are used by relatively few providers), food (12%), and utilities (5%). As in center care, labor cost (which includes the provider's net income from child care) is by far the largest component of total cost (64% of gross income). This is a smaller percentage than nonprofit centers allocate for personnel but is roughly comparable to that of for-profit centers.

Given the low income generated by family child care, it is more appropriate to think of family child care providers as self-employed individuals who work at home for a variety of reasons rather than as entrepreneurs who are motivated by profits. The EFCC study, for instance, estimates mean forgone earnings for family child care providers at \$3,841 per year (see Table 5); these providers could hardly be thought of as earning a profit. In fact, most respondents reported that they chose family child care for altruistic or family reasons (usually, to care for their own children).

### Comparison of Center and Family Child Care Finances

Table 5 compares the financial picture for center and family child care provision using data from the CQO and EFCC studies. The most interesting finding shown in Table 5 is the apparent similarity in total costs between the two child care sectors when the provider's income is included as the major component in labor costs. Occupancy costs were lower, and food and other costs were higher in family child care than in center care. The full cost of care represented 135% of family child care expended cost, but 156% of center expended cost.

Fees were somewhat lower for preschoolers, but dramatically lower for infants in family child care homes than in centers. Lower fees may be part of the reason many parents of infants choose family child care over center-based care, as reported by

---

***Fees were somewhat lower for preschoolers, but dramatically lower for infants in family child care homes than in centers.***

---

Hofferth in this journal issue. Center teacher wages, while low, were nevertheless higher than net family child care provider income and benefits. The forgone wages of teachers in centers were higher than the forgone earnings of family child care providers, partly because of the reduced expenses of working incurred by family child care providers (for example, they did not need to pay for child care).

Table 5

Comparison of Center and Family Child Care Costs, Fees, and Income <sup>a</sup> , Dollars per Child per Month				
	Centers		Family Care	
	Mean Monthly Values per Child	Percentage <sup>b</sup> of Total Cost	Mean Monthly Values per Child	Percentage <sup>b</sup> of Total Cost
<b>Number of Observations</b>	300		133	
<b>Costs</b>				
Labor	\$ 236	70 %	\$ 218	64 %
Occupancy <sup>c</sup>	53	14	18	5
Food	19	5	42	12
Other	44	11	65	19
Total Cost	352	100	343	100
Full Cost	\$ 548	156 %	\$ 462	135 %
<b>Fees and Earnings</b>				
Maximum monthly fees				
Preschool	\$ 372		\$ 318	
Infants	454		341	
Teachers wage or net provider income and benefits	15,018		12,864	
Teacher or provider annual forgone earnings <sup>d</sup>	5,238		3,841	

<sup>a</sup> The family child care providers sample comes from Los Angeles, California; Charlotte, North Carolina; and Dallas-Fort Worth, Texas. The center data came from Los Angeles, California; Greensboro-High Point and Winston-Salem, in North Carolina; the Front Range in Colorado; and Connecticut. To permit a reasonable comparison, Connecticut centers were eliminated from this analysis because of the high cost of living in that state. Colorado and Dallas-Fort Worth are comparable.

<sup>b</sup> Percentages may differ slightly from actual because of rounding.

<sup>c</sup> Occupancy costs were estimated at the utilities costs included as a child care expense based on the time/space formula.

<sup>d</sup> Forgone earnings are not strictly comparable in that family provider income and benefits include the value of the provider's

Sources: Helburn, S., ed. *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research on Economics and Social Policy, University of Colorado, 1995; Modigliani, K., Helburn, S., Morris, J., and Culkin, M. The economics of family child care project. Unpublished manuscript. Wheelock College, Boston, 1996.

## Relationships Between Child Care Quality and Costs

While a few studies have considered relationships between child care costs and quality using only structural measures of quality,<sup>39-41</sup> the CQO and EFCC studies examined relationships between cost and quality using measures of process quality. In both center and family child care programs, the costs of providing child care were moderately and positively related to the quality of care provided. In the family child care study, the main comparison was between mediocre and poor-quality child care homes because

there were too few good-quality homes in the sample (only 11) to be able to make meaningful comparisons. Results indicated that total expended cost per child per hour was higher in mediocre homes than in poor-quality homes. In the CQO study, total labor costs were higher in better-quality centers when other center characteristics<sup>42</sup> were considered. This was expected because staffing ratios and staff education were associated with quality, as described earlier in this article.

To determine how much it costs to increase center quality, a *cost function* was estimated in the CQO study. Based on econom-

ic theory, a cost function is a mathematical expression of the relationship between the costs of a service or product and factors such as the price of labor and the quality and quantity of services provided which are thought to influence the cost. In the CQO study, the cost function related center total variable costs to wages of staff of different education levels (a high school diploma, some college, or bachelor's degree or more), hours of child care provided for each age group, child care process quality, physical size of the center, volunteer hours, region of the country, and whether the center was for-profit or nonprofit. Total variable cost includes expended costs (except for facilities cost), in-kind donations, and the extrapolated salary of owner-operators.

Results of the analyses indicated that positive, significant, but modest relationships exist between cost and quality. Specifically, the results suggest that raising quality by 25% from mediocre to good would increase total variable costs about 10%—that is, by 13 cents per child hour or about \$300 per child per year. For a child care center of average size, this would mean an increase of \$18,000 per year.<sup>43</sup> This assumes that wages, hours of service provided, space, and volunteer hours remain the same. The analysis also indicated that it costs more to increase quality when a center's quality is already relatively high (for example, to increase it from good to excellent). It costs less to increase quality from poor to mediocre.

This finding that improving quality from mediocre to good would require cost increases of only about 10% seems to contradict the finding reported earlier, based on several studies, that process quality is related to staffing ratios. The cost of increasing staffing ratios enough to raise quality from mediocre to good is substantial. This suggests that at least some of the qualities or characteristics that enable centers to provide good-quality care relatively inexpensively are not included in the model. For instance, the CQO study found that a child care director's administrative experience and effectiveness positively affected quality, but this factor was not (by design) included in the cost function. Other factors, such as personality traits of staff, staff commitment to good quality, and effective teamwork, undoubtedly also contribute to overall program quality.

The CQO study also looked for differences in the cost-quality relationship by sector (for-profit versus nonprofit) and corroborated findings of earlier studies.<sup>39-41</sup> No significant differences were seen in variable cost per child hour between the two sectors, for the same size of center, wages paid, quality, and amount of physical space. Looking within the for-profit and nonprofit sectors reveals overall similarities in cost and quality between church-affiliated and for-profit centers. Both groups of centers seem to

---

***Parents do not appear to differentiate among varying qualities of child care programs, and these data indicate that parents cannot use fees as an indicator of quality.***

---

occupy the same market niche, dependent on attracting mainly middle-income families. Average values of structural and process quality in both sectors are significantly lower than for independent nonprofits and publicly operated centers. It appears that these centers face stiff competition with each other and that parents' inadequate knowledge about quality means that affordability, not quality of services, drives competition.

Overall, the results of this analysis indicate that cost and quality are related, but that it takes only a small amount of money to raise quality. As mentioned earlier, parents do not appear to differentiate among varying levels of quality of child care programs, and these data indicate that parents cannot use fees as an indicator of quality. Furthermore, there does not seem to be much consumer pressure to increase quality. In analyses not otherwise reported here, the CQO study found that the differential in fees between mediocre and good centers was smaller than the cost differential, implying that there is an economic disincentive for centers that are highly dependent on parent fees to improve quality.

## Conclusions

A review of the literature on the cost and quality of child care for children of working parents indicates that (1) the quality of services is mediocre, on average; (2) the cost of full-time care is high; (3) at the present time,

the cost of increasing quality from mediocre to good is not great, about 10%; (4) good child care is dependent on professionally approved staffing ratios, well-educated staff, low staff turnover, a good adult work environment, and effective leadership by experienced directors; (5) these characteristics are interrelated and, taken together, are costly; and (6) therefore, the present modest link between cost and quality reflects the impact of other factors that have not been captured in studies thus far, such as the staff characteristics and teamwork of committed staff providing a labor donation.

Other conclusions are also notable. Licensed family child care fees are not much lower than center care fees, except for infant care, although on average the quality of that care is somewhat lower. The quality of services and earnings of family child care providers are higher for those who care for a larger number of children with a commitment to their profession and who operate as a small business.

Fees are set through competitive forces that maintain a continual downward pressure. Donations of facilities, equipment and materials, volunteers, and labor mean that fees do not reflect the cost of production. There is not much variation, on average, between fees for mediocre and good care, so that parents, who have little knowledge about the quality of care their children are receiving cannot use the fees charged to them as a means of differentiating between good and not-so-good care. Furthermore, the fee differential is smaller than the differ-

ence between the cost of mediocre and of good care, so that centers have an economic disincentive to improve quality.

These findings are depressing, to say the least. They reflect the low priority given to children's care and women's work in American society. This must change if children's needs are to be met now and in the future. Further research is needed to better understand such aspects of child care provision as the nature of parents' choices for child care and the underlying features of care that affect cost and quality, as these will help to illuminate relevant policy directions.

In the meantime, the following steps are recommended: (1) launch consumer education efforts to help parents identify good-quality child care programs and to inform the American public of the consequences of poor-quality programs for children; (2) implement higher standards for child care at the state level as a step toward eliminating poor-quality child care; (3) avoid public policies that encourage people to become child care providers if they have no interest in such a career; (4) increase public and private investments in child care, using strategies such as tying funding to standards that produce high-quality care, providing financial incentives to enable the hiring and retention of trained professionals, and tailoring employee benefits to provide child care support; and (5) develop the means to compensate child care workers as is appropriate for their levels of training, experience, and responsibility.

1. Helburn, S., ed. *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado, 1995.
2. Kontos, S., Howes, C., Shinn, M., and Galinsky, E. *Quality in family child care and relative care*. New York: Teachers College Press, 1994.
3. Modigliani, K., Helburn, S., Morris, J., and Culkin, M. The economics of family child care project. Unpublished manuscript. Wheelock College, Boston, 1996.
4. Hayes, C.D., Palmer, J.L., and Zaslow, M.J., eds. *Who cares for America's children? Child care policy for the 1990s*. Washington, DC: National Academy Press, 1990.
5. Howes, C., and Hamilton, C.E. Child care for young children. In *Handbook of research on the education of young children*, B. Spodek, ed. New York: Macmillan, 1993.
6. See, for example, Gomby, D.S., and Larner, M.B., eds. Long-term outcomes of early childhood programs. *The Future of Children* (Winter 1995) 5,3:1-224.
7. Phillips, D. *Predictors of quality child care*. Washington, DC: National Association for the Education of Young Children, 1987.

8. Clifford, R.M., Harms, T., Pepper, S., and Stuart, B. Assessing quality in family child care. In *Family day care: Current research for informed policy*. D. Peters and A. Pence, eds. New York: Teachers College Press, 1992.
9. Whitebook, M., Howes, C., and Phillips, D. *Who cares? Child care teachers and the quality of care in America*. Oakland, CA: Child Care Employee Project, 1990.
10. Phillips, D., Mekos, D., Scarr, S., et al. Paths to quality in child care: Structural and contextual influences in children's classroom environments. Unpublished manuscript, 1995.
11. Howes, C., Phillips, D., and Whitebook, M. Thresholds of quality: Implications for the social development of children in center based care. *Child Development* (1992) 63: 449-60.
12. Howes, C., and Smith, E.W. Relations among child-care quality, teacher-behavior, children's play activities, emotional security, and cognitive activity in child care. *Early Childhood Research Quarterly* (1995) 10,4:381-404.
13. Phillips, D.A., Howes, C., and Whitebook, M. The social policy context of child care: Effects on quality. *American Journal of Community Psychology* (1992) 20,1:25-51.
14. Whitebook, M., Phillips, D., and Howes, C. *National Child Care Staffing Study revisited: Four years in the life of center-based child care*. Oakland, CA: Child Care Employee Project, 1993.
15. Hofferth, S.L. *National Child Care Survey, 1990*. Washington, DC: The Urban Institute, 1991.
16. Howes, C., and Hamilton, C. E. The changing experience of child care: Changes in teachers and in teacher-child relationships and children's social competence with peers. *Early Childhood Research Quarterly* (1993) 8:15-32.
17. Kisker, E., and Maynard, R. Quality, cost and parental choice of child care. In *The economics of child care*. D.M. Blau, ed. New York: Russell Sage Foundation, 1991.
18. Shinn, M., Phillips, D.A., Howes, C., et al. Correspondence between mothers' perceptions and observer ratings of quality in child care centers. Unpublished manuscript, New York University, 1990.
19. Browne-Miller, A. *The day care dilemma: Critical concerns for American families*. New York: Plenum, 1990.
20. Mitchell, A., Cooperstein, E., and Lerner, M. *Child care choices, consumer education and low-income families*. New York: National Center for Children in Poverty, 1992.
21. Cryer, D. Infant child care: Parent perceptions and child experiences. Unpublished manuscript, University of North Carolina, 1989.
22. Siegel, G., and Loman, L. *Child care and AFDC recipients in Illinois: Patterns, problems, and needs*. St. Louis, MO: Institute of Applied Research, 1991.
23. Brush, L.R. Projecting the costs of full-day child care from the costs of Head Start. Unpublished manuscript for the National Academy of Sciences Panel on Child Care Policies, 1988.
24. Clifford, R., and Russell, S.D. Financing programs for pre-school children. *Theory Into Practice* (1989) 28,1:19-27.
25. U.S. General Accounting Office. *Early childhood programs: What are the costs of high-quality programs?* GAO/HRD-90-43Br. Washington, DC: U.S. GAO, January 24, 1990.
26. Ruopp, R., Travers, J., Glantz, F.M., and Coelen, C. *Children at the center: Summary findings and their implications*. Final report of the National Day Care Study. Cambridge, MA: Abt Associates, 1979.
27. See note no. 3, Modigliani, Helburn, Morris, and Culkin. This study surveyed a subsample of 133 family child care providers who also participated in the Study of Children in Family Child Care and Relative Care. Providers from California, North Carolina, and Texas were interviewed by phone in 1993 to obtain extensive cost, revenue, subsidies, and tax information, as well as information about enrollment, program characteristics, and provider attitudes. These data were combined with information gathered through the companion study on process and structural quality.
28. Ferguson, W.D., and Cosgrove, J. Nonprofit status and wages: An investigation of the child care industry with firm-specific effects. Unpublished paper delivered at the Western Economics Association meetings, June 1994.
29. Preston, A.E. The effects of property rights on labor costs of nonprofit firms: An application to the day care industry. *Journal of Industrial Economics* (1988) 36,3:337-50.

30. Preston, A.E. The nonprofit worker in a for-profit world. *Journal of Labor Economics* (1989) 7,4:438–63.
31. Weisbrod, B.A. Nonprofit proprietary sector behavior: Wage differentials among lawyers. *Journal of Labor Economics* (1983) 1,3:246–63.
32. Mirvis, P.H., and Hackett, E.J. Work and work force characteristics in the nonprofit sector. *Monthly Labor Review* (April 1983) 106,2:3–12.
33. Rose-Ackerman, S. Altruistic nonprofit firms in competitive markets: The case of day-care centers in the United States. *Journal of Consumer Policy* (1986) 9:291–310.
34. In the two studies, forgone earnings were measured for each staff member and for each family provider as the difference between the person's actual child care earnings and the wages the person could earn in the same labor market (state, in this case), given the person's age, gender, racial and ethnic background, and number of years of education. To make these calculations, wage equations were estimated for the regions from the 1992 Census of Population Statistics (CPS) tapes. These equations were then used to estimate the forgone earnings of each center teaching staff person and each family child care provider. The CPS tape does not include data on prior experience of workers, and the study data set did not include marital status of staff or their number of children, so these measures could not be included in the wage equations. These exclusions could affect the estimates to some extent.
35. In the GAO study (see note no. 25), labor costs represented 65%, occupancy (including donated space) 11%, food 7%, and other operating costs 19%. As cited in Powell, R., Eisenberg, D. R., Moy, L., and Vogel, J. Cost and characteristics of high-quality early childhood education programs. *Child and Youth Care Forum* (April 1994) 23,2:103–18.
36. *The economic report of the President, 1993*. Washington, DC: U.S. Government Printing Office, 1993, p. 361.
37. Most parents are entitled to credit on their federal income taxes ranging from 30% of child care expenses for low-income parents who pay taxes down to 20% for parents with an adjusted gross income greater than \$28,000. Given the average incomes of parents in the sample centers, most parents would qualify only for the 20% credit. This estimate overstates the effect of the tax credit because not all parents who are eligible actually take it. (See also the article by Stoney and Greenberg in this journal issue.)
38. Estimates were also calculated for providers with family incomes below 185% of poverty and for providers serving at least three full-time equivalent children. For these two categories, differences from the average were not, on the whole, significant, and so are not reported here.
39. Mukerjee, S., and Witte, A.D. Provision of child care: Cost functions for profit-making and not-for-profit day care centers. *Journal of Productivity Analysis* (1993) 4: 145–63.
40. Preston, A. Efficiency, quality and social externalities in the provision of day care: Comparison of nonprofit and for-profit firms. *Journal of Productivity Analysis* (1993) 4:165–82.
41. Powell, I., and Cosgrove, J. Quality and cost in early childhood education. *Journal of Human Resources* (1992) 27:472–84.
42. Factors included the state in which the center was located, whether centers were for profit or nonprofit, and the mix of age groups of children served.
43. This analysis may understate the cost-quality relationship somewhat because it holds wages constant; it is based on the assumption that wages for particular quality levels of staff members (as indicated by their levels of education) are set in the labor market and that centers pay the going wages. Although this assumption is undoubtedly true for the majority of centers, it is also possible that good-quality centers offer higher-than-market wages, either to attract the best people or to increase productivity of existing staff members by improving their morale and loyalty. In the former instance, wages based on education levels do not capture other worker qualities for which centers have to pay. In the latter instance, it probably costs somewhat more than an average of 13 cents per child per hour to raise quality from mediocre to good levels.