

The Social Policy Context of Child Care: Effects on Quality¹

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Examined effects on the quality of children's child care environments of (a) the stringency of state child care regulations, (b) voluntary compliance with proposed federal child care standards, and (c) the legal auspice of the center. Quality of care was assessed in 227 child care centers in five metropolitan areas. Centers in states with more stringent child care regulations tended to have better staff-child ratios, staff with more child-related training, and lower staff turnover rates. Similarly, centers that more fully complied with the ratio, group size, and training provisions of a set of proposed federal child care standards had significantly lower staff turnover rates, more age-appropriate classroom activities, less harsh and more sensitive teachers, and more teachers with specialized training. For-profit centers offered children less optimal care

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than did nonprofit centers. These findings are placed in the context of ecological models of research and of contemporary policy debates about child care.

Child care has been studied extensively as an environment for children's growth and development (Clarke-Stewart & Fein, 1983; Hayes, Palmer, & Zaslow, 1990). More recently, it has been conceptualized as a work environment for adult caretakers (Phillips, Howes, & Whitebook, 1991), and as a source of family support (Powell, 1987). Child care also exists within a policy context that is likely to influence how it affects children, caretakers, and families. Specifically, child care centers operate in the context of state regulations and under distinct legal and financial auspices. This level of variation, however, has received minimal attention in child care research. The research reported here was designed to examine the effects of differing child care regulations and of profit-nonprofit status on the quality of care provided by child care centers in five states.

ECOLOGICAL FRAMEWORK OF THE STUDY

The theoretical framework for the study draws upon ecological models of research (Bronfenbrenner, 1979; Seidman, 1987) that explicitly acknowledge the multiple levels of environmental influence on individual behavior and development. Individuals are placed at the core of several concentric layers of influence, ranging from their immediate environments (microsystem) to the ideologies that prevail in their culture (macrosystem). Outer layers of influence are theorized to constrain the characteristics, quality, and effects of more immediate environments. Accordingly, efforts to go beyond the environments that individuals inhabit in their daily lives to understand precisely how other levels of environmental influence affect these daily settings and, ultimately, how their influence reaches the individual are of particular interest.

Ecological models are particularly well-suited to the study of child care insofar as the child is embedded in the immediate classroom (microsystem), which is directly affected by other settings in the community—such as child care training programs—that do not contain the child (exosystem). These two systems are in turn affected by the broader economic and political structures—such as child care regulations—that influence how social institutions are organized in our society (macrosystem). The least studied of these layers in all areas of psychological research, including research on child care, is the outermost, macrosystem of influence. This is a particularly

troubling oversight among community psychologists insofar as many of the factors discussed in this subfield's theoretical literature, including ideological and political influences (Price, 1989; Rappaport, 1981; Reppucci, 1985; Seidman, 1988), reside in the macrosystem. Moreover, ecological theory acknowledges that different environmental levels are more or less amenable to intervention by different mechanisms. We suggest that policy mechanisms are best suited to macrosystem interventions, namely, those interventions that focus on broad patterns of funding, organizational structure and incentives, and regulation.

The research reported here is part of a larger study of child care whose design was based on ecological frameworks for research (Whitebook, Howes, & Phillips, 1990). Specifically, we examined the differing levels of environmental influence represented by the quality of children's immediate classrooms, by the adult work environment in the participating child care centers, by the legal-financial structure of the centers, and by the stringency of the state child care regulations with which each center was required to comply. This report focuses on the relation between the macrosystem, represented by policies reflected in state child care regulations and centers' legal auspices, and the quality of the immediate microsystem of the child's classroom. As such, we hope to provide an example of community-based policy research. Before discussing the measurement of child care quality, we provide an overview of the regulatory and legal context of child care.

THE REGULATORY CONTEXT OF CHILD CARE

In every state, child care centers are required to comply with regulations that establish a threshold of quality below which children's development is presumably compromised. Safety and health precautions figure prominently in these regulations, but the majority also include provisions regarding staff training, staff-child ratios, and maximum group sizes. States vary widely, however, in the stringency of these regulations (Phillips, Lande, & Goldberg, 1990). For example, centers in Massachusetts are required to have 2 caregivers per 7 infants, whereas centers in Georgia are permitted to have 1 caregiver per 7 infants.

Given that the central purpose of these regulations is to affect the quality of care that is provided to children, a key policy issue concerns the effectiveness with which this function is served. This, of course, requires a sample of child care centers from several states. The National Child Care Staffing Study (Whitebook et al., 1990) offers this sample. Child care centers were recruited from five sites in states that include the most stringent

(Massachusetts) and the most lax (Georgia) child care regulations. In the absence of samples of this nature, there has been virtually no information on the relation between regulation and quality of care.

A related question about the influence of regulations on child care quality concerns the issue of compliance. Do centers that comply with regulations that reflect prevailing definitions of high quality care actually offer higher quality care than centers that do not comply? This requires that the observed quality of care in a diverse sample of centers be compared to a uniform benchmark. We selected the Federal Interagency Day Care Requirements (FIDCR), adopted in 1980 and almost immediately rescinded, as this benchmark. Among an array of provisions, the FIDCR reflect a professional consensus about three core ingredients of quality: the ratio of children per adult caregiver, the maximum number of children in a given classroom (group size), and the child-related training of the teaching staff. The FIDCR, therefore, offer the opportunity to examine the potential influence of federal standards on child care quality, and, more generally, provide an appropriate voluntary benchmark with which to explore the relation between regulatory compliance and child care quality.

THE LEGAL CONTEXT OF CHILD CARE

In addition to varying in compliance with standards, centers vary in their financial and legal auspice. Some centers are for-profit organizations whereas others operate on a nonprofit basis. Our interest in examining differences in quality of care based on the auspice of the center has both theoretical and empirical origins.

Traditionally, nonprofit entities have claimed to offer higher quality services than are available in the for-profit sector. The nonprofits' claims of higher quality are based on the theory of "contract failure" (Hansmann, 1980; Nelson & Krashinsky, 1973) which addresses situations in which the consumer is not able to evaluate adequately the quality of services and thus an opportunity for exploitation exists. Because nonprofit organizations cannot distribute profits to those who control the organization, the motivation for exploitation, in the form of cutting costs and reducing quality, is presumably reduced. For-profit organizations, in contrast, are viewed as having both legal sanction and motivation to make increased profits by exploiting consumers. Little is known about the applicability of notions of contract failure to child care, but an obvious first step is to assess the basic assumption that nonprofit child care centers offer higher quality care than do for-profit centers.

Available research (Coelen, Glantz, & Calore, 1979; Kagan, 1991; Kagan & Newton, 1989; 1991; Keyserling, 1972) suggests that nonprofit centers do, in fact, offer higher quality care than for-profit centers. For example, Kagan and Newton found that nonprofit centers had more “child sensitive” environments, including more sensitive and encouraging caregiver–child interactions. However, this evidence is based on single-site studies that fail to reflect the full diversity of both profit and nonprofit care, and on data that predate the recent rapid expansion in for-profit child care. We examined the implications of profit–nonprofit status for quality of care in a large sample of centers that, as noted above, reside in states that require very different levels of quality for licensing.

MEASUREMENT OF QUALITY

Empirical studies of the quality of child care are grounded in a framework that emphasizes predictive validity. Specifically, developmentalists define quality as those aspects of child care that are significantly associated with better outcomes for children, including cognitive, language, and socioemotional development (see Hayes et al., 1990; Phillips & Howes, 1987). A rich research literature now supports a multimeasure approach to assessing quality of care that encompasses structural features (e.g., staff–child ratios), the developmental environment, staff–child interactions, and the stability of care. Each of these dimensions of quality captures a distinct feature of what children experience in child care. Accordingly, the field has come to adopt a strategy of convergent measurement when assessing child care quality (Zaslow, 1991). This strategy was adopted in the present study, in which each of the following aspects of quality was operationalized.

The structural characteristics of staff:child ratio and group size, and staff qualifications reflected in education and training, are often referred to as “regulatable” features of care. Although some studies fail to find significant associations between some of these features and children’s development (see, e.g., Kagan & Newton, 1989, and Whitebook et al., 1990, for nonsignificant group size effects), when associations are found they consistently point to higher ratios (fewer children per teacher), smaller groups, and better trained and educated staff as predictors of positive development among children in child care (Howes & Rubenstein, 1985; Howes & Stewart, 1987; Phillips, McCartney, & Scarr, 1987; Ruopp, Travers, Glantz, & Coelen, 1979; Vandell & Powers, 1983; Whitebook et al., 1990).

Assessments of the developmental environment of child care that provide a comprehensive summary of the physical environment, the activities that children experience, and the quality of staff–child interactions also ex-

ist (Harms & Clifford, 1980; Sibley & Abbott-Shim, 1988). Research that relies on these assessments have consistently revealed positive associations between quality and children's development (see Hayes et al., 1990, for a review of this literature).

Other measures of quality focus on the nature of staff-child interactions, such as the staff's sensitivity to children's needs. These measures are often found to mediate positive relations between the regulatable or global quality variables and child outcomes (Howes, Phillips, & Whitebook, in press).

Finally, recent assessments of quality have pointed to the importance of stability of care (Howes & Stewart, 1987; Howes, 1988) and of stable relations between caregivers and children (Anderson, Nagle, Roberts, & Smith, 1981; Cummings, 1980) as significant predictors of children's well-being in child care. These findings have directed attention to staff turnover rates as an important quality indicator, although only one study has documented a direct link between staff turnover and children's development (Whitebook et al., 1990).

HYPOTHESES

We hypothesized that policy-level variation in regulatory stringency and compliance, and in the legal-financial auspice of child care centers, influences the quality of child care that children are observed to receive. We examined three questions: (a) Does the quality of children's child care environments vary with the stringency of state child care regulations? We hypothesized that centers located in states with more stringent regulations would offer higher quality care. (b) Do centers that comply with proposed federal child care standards in the areas of staff-child ratios, group size, and staff training offer better environments for children? We hypothesized that they would. And, (c) is the legal auspice of the center associated with compliance and quality of care? We hypothesized that nonprofit centers would have higher rates of regulatory compliance and be observed to offer higher quality care to children than for-profit centers.

METHOD

Quality of care was examined in 227 child care centers in five metropolitan areas: Atlanta ($n = 46$), Boston ($n = 44$), Detroit ($n = 45$), Phoenix ($n = 45$), and Seattle ($n = 47$). These sites were selected to capture wide variation in the level of quality required by each state's child care

regulations. As seen in Table I, Massachusetts had the most stringent regulations that matched or exceeded those of each of the other sites. Michigan and Washington closely matched Massachusetts' ratio requirements (with the exception of Washington's toddler ratio), but were either silent or less stringent on group size and training. Georgia had the most lax regulations, in general, followed closely by Arizona.

Data collection took place between February and August 1988. Classroom observations and interviews with center directors and staff provided data on center characteristics and quality.

Centers

Child care centers were recruited from the five study sites using a two-part sampling strategy. First, full-year, full-day centers that had been in operation for at least 9 months were identified from lists of licensed child care centers. Second, eligible centers were divided into six groups based on their location in (a) low-, middle-, or high-income U.S. Census tracts, and (b) urban or suburban neighborhoods. The final sample was then randomly selected to match the proportion of eligible centers in each of these six income and neighborhood groups. Replacement sampling was used to handle refusals.

Of all eligible centers asked to participate, 61% agreed. The participation rates in the five study sites ranged from 45–75% of all eligible centers. Refusal rates were higher among centers in middle-income (42%

Table I. State Child Care Regulations for Ratios and Group Size, 1988^a

State	Ratios			Group size		
	Infant	Toddler	Preschool	Infant	Toddler	Preschool
Arizona	1:5	1:6 1:8	1:15 1:20	NR	NR	NR
Georgia	1:7	1:10	1:15 1:18	NR	NR	NR
Massachusetts	2:7	1:4	1:10	7	9	20
Michigan	1:4	1:4	1:10 1:12	NR	NR	NR
Washington	1:4	1:7	1:10	8	14	20

^aNR indicates not regulated. Infant refers to children 1 year and younger (or not walking); toddler refers to 1- and 2-year-olds; preschool refers to 3- and 4-year-olds. Where two ratios are listed for an age group, the first refers to the youngest age and the second refers to the oldest (e.g., 1:15 for 3-year-olds and 1:20 for 4-year-olds in Arizona). Only Arizona and Massachusetts require preservice training and a specified number of hours of annual, in-service training (12 hours in Arizona; 20 hours in Massachusetts).

refused) and high-income (38% refused) census tracts than among those in low-income tracts (23% refused). Refusals were also higher among for-profit (40% refused) than nonprofit centers (21% refused). Telephone screening interviews also revealed that directors of participating centers reported higher (i.e., better) adult:child ratios than did the directors who refused to participate. This suggests that the final sample of 227 centers may be of higher-than-average quality.

Classrooms and Teachers

In each center, three classrooms were randomly selected to be observed, one each from among all available infant (4 weeks to 11 months), toddler (12 to 35 months), and preschool (36 to 59 months) classrooms. In centers that did not enroll infants, only two classrooms were observed unless a third, mixed-age classroom was available for observation. Across all participating centers, the research teams observed 643 classrooms: 85 (13%) infant, 151 (23%) toddler, 313 (49%) preschool, and 94 (15%) mixed-age classrooms. Toddler classrooms were further divided into those with young (1-year-olds) and older (2-year-olds) toddlers. The mixed-age classrooms were eliminated from all analyses reported in this article.

Two staff members from each participating classroom were interviewed and observed. Only two teachers were assigned to the majority of classrooms, but when there were more than two teachers, the participating staff were selected randomly. In classrooms with only one staff member, this individual was asked to participate. Staff participation rates were over 95% in each site. Of the final sample of 1,309 participating staff, 66% (865) were teachers and 34% (444) were assistant teachers.

Measures

Quality Assessments

Overall quality of care was assessed with the Early Childhood Environment Rating Scale (ECERS; Harms & Clifford, 1980) for each preschool classroom and the Infant-Toddler Environment Rating Scale (ITERS; Harms, Cryer, & Clifford, 1986) for each of the infant and toddler classrooms. These scales comprehensively assess the day-to-day quality of care provided to children, ranging from the safety of the equipment to the quality of teaching. Individual items (37 on the ECERS and 35 on the ITERS) are rated from a low of 1 to a high of 7. A rating of 3 on these scales indicates *minimally acceptable* quality, while a 5 indicates *good* qual-

ity. Two subscales were derived from a maximum likelihood factor analysis, with oblique rotation, of the ECERS and ITERS scale items. The first subscale, labeled Appropriate Caregiving, captured the items pertaining to child–adult interactions, supervision, and discipline. The second subscale, labeled Developmentally Appropriate Activity, captured the items pertaining to the materials, schedule, and activities. The first subscale accounted for 23% of the variance in both the preschool and infant/toddler versions of the scale (eigenvalues were 8.27 and 7.36, respectively); the second subscale accounted for 14% (eigenvalue of 5.21) and 16% (eigenvalue of 5.15) of the variance, respectively. Intercorrelations between the subscales exceeded .78 for classrooms serving all ages of children, and thus cannot be interpreted as independent, particularly if observers have adopted implicit, logical theories of quality.

The structural features of staff:child ratio and group size were assessed with classroom observations in which the numbers of adults and children were recorded at regular intervals during a 2-hour observation period. Both morning and afternoon observations were required in each classroom. The multiple observations were averaged to create a ratio and group size score for each age group of children (infants, toddlers, and preschoolers).

Staff qualifications were assessed as part of an individual interview conducted with each participating teacher. For this report, the early childhood training of the staff is used as a proxy for staff qualifications given the prominence of this variable in debates about child care regulations. This is a continuous variable, ranging from *no early childhood training* (0) to *advanced degree in early childhood education, child development, or related field* (5).

Staff–child interaction was assessed using the Arnett scale of Teacher Sensitivity (Arnett, in press). This is an observational measure, consisting of 26 items, each of which is rated from *did not occur* (1) to *occurred often* (3). Three scores accounting for 60.4% of the variance were derived from this scale using principal component analysis with varimax rotation: Harshness (9 items including critical, threatens children, and punitive; eigenvalue was 10.18), which accounted for 39.2% of the variance; Sensitivity (9 items including warm, attentive, engaged; eigenvalue was 3.92), which accounted for 15.1% of the variance; and Detachment (4 items including low levels of interaction, interest, and supervision; eigenvalue was 1.61), which accounted for 6.2% of the variance. Scores for Sensitivity and Harshness range from a low of 4 to a high of 36; scores for Detachment range from a low of 4 to a high of 16.

Staff turnover was assessed by asking each center director to indicate how many classroom staff had left the center in the past year. The annual

turnover rate was calculated by dividing this number by the total number of classroom staff.

Determination of Compliance

All participating centers were classified by whether they met all, two, one, or none of three provisions—staff training, ratios, and group size—contained in the Federal Interagency Day Care Requirements (FIDCR). The FIDCR required that staff “regularly participate in specialized training.” Centers whose directors indicated that they provided payment for attendance at on-site, in-service training or paid release time for off-site training and workshops were in compliance with this training provision. Ratios, based on attendance, were set at 1:3 for infants under age 2 years, 1:4 for toddlers (2 years of age), and 1:8 for preschoolers (3–6 years) in the FIDCR. Group sizes, based on attendance, were set at 6, 12, and 16 for these age groups, respectively. Centers whose infant, toddler, and preschool classrooms met or improved upon these ratio and group size limits were in compliance. For this purpose only, we combined infant (under 1 year of age) and young toddler (1-year-olds) classrooms to correspond to the FIDCR age classifications.

Determination of Auspice

Directors were asked to indicate the auspice of their center with a choice of three for-profit categories (independent, local chain, national chain) and nine nonprofit categories (independent, Head Start, parent cooperative, church sponsored, university sponsored, public or private school sponsored, corporate sponsored, government agency sponsored, and community organization sponsored). Based on the distribution of centers and policy-relevant categories, four different auspices were compared: (a) independent, for-profit centers ($n = 89$), (b) for-profit chains ($n = 18$), (c) nonprofit, nonsectarian centers ($n = 83$), and (d) sectarian centers run by churches and synagogues (also nonprofit) ($n = 37$).

Procedure

Data collection in each site was completed by a local team of research assistants. These teams were composed of individuals with dual qualifications. Each assistant had experience as a teacher, director, or support staff in the child care delivery system. Each also was an experienced, trained

observer of child care and children. On average, at least two assistants spent 3 days in each center. Director interviews, taking 3 hours on average, were completed prior to any other data collection. Classroom observations were completed prior to staff interviews. Observers were unaware of the information provided by the directors, including information about the auspice of the center. However, it was not possible to assure that the observers were blind to the auspice of the center in every case. A minimum of 2 hours per classroom was required to complete the two observational measures (ECERS/ITERS and the Arnett scale), with counts of adults and children made at regular intervals during this period. Thus, the same observers assessed the structural variables such as staff:child ratios and the developmental and interactional measures of quality. However, the attentional demands of assessing these constructs simultaneously is likely to have militated against any deliberate contamination across these various types of quality measures. In most cases, each classroom was visited on more than 1 day; in all cases, both morning and afternoon activities were observed. Staff interviews required, on average, $1\frac{1}{2}$ hours.

Cross- and within-site, interrater reliabilities (percentage agreement, based on scale items) were calculated for the observational measures. Within-site reliabilities (based on 5% of the center sample, and on agreement at the item level) exceeded 90% agreement in each site for the ECERS/ITERS factors, the factors from the Arnett scale, and ratio and group size counts. Cross-site reliabilities, determined at the midpoint of data collection by having one research assistant from each site travel to two other sites, were above 85% agreement for all pairs of sites for each of the observational measures. Test-retest reliabilities for the interviews were computed for 10 directors and 10 teaching staff who were not participating in the study. Test-retest reliability, averaging across all items on the director interview, was $r = .82$ (range = $.79$ to $.94$). Reliability, averaging across all items on the staff interview, was $r = .79$ (range = $.71$ to $.92$).

Plan of Analysis

The quality variables that we report were measured at different units or levels. Staff turnover was assessed at the center level. Ratio, group size, and the ITERS/ECERS subscales of Appropriate Caregiving and Developmentally Appropriate Activities were measured at the classroom level. And, staff education and the three Arnett scales (Sensitivity, Harshness, Detachment) were measured at the staff level. The analyses were, therefore, conducted on different units of analysis corresponding to these differing levels of measurement: center, classroom, and staff.

To determine whether child care centers in states with differing child care regulations differ significantly in quality of care, several MANOVAs were conducted, followed by univariate analyses in the case of significant MANOVAs. Scheffé tests were used to make post hoc comparisons of group means. Three one-way MANOVAs (with site as the independent variable) were conducted on the ratio and group size variables, respectively, for infant, toddler, and preschool classrooms. Three one-way MANOVAs were conducted to examine site effects on the two ITERS and ECERS subscales and the four staff-level variables, respectively. A one-way ANOVA was conducted on staff turnover. To determine whether centers that show differing levels of compliance with the FIDCR and that operate under differing auspices offer differing qualities of care, these same analyses were rerun with the four levels of compliance and, then, the four levels of auspice substituting for site as the independent variable. The compliance analyses did not include the dependent measures of ratio and group size given that these variables were used to determine each center's degree of FIDCR compliance. The results for the site analyses are presented first, followed by those that examine the effects of compliance with the FIDCR and center auspice, respectively.

RESULTS

Effects of State Regulation

Did the observed pattern of quality correspond to the site-specific differences in the level of quality required by state child care regulations (see Table I)? Table II presents the observed ratios and group sizes by the age of children in the classroom in each of the study sites. The MANOVAs run on the observed ratios and group sizes were significant for all age groups: $F(16, 449) = 6.34$ for infants, $F(16, 531) = 4.44$ for toddlers, $F(16, 603) = 5.88$ for preschoolers, all $ps < .001$. The univariate analyses revealed that the sites differed significantly in observed ratios for each age group but did not differ in group sizes.

Centers in the three sites (Boston, Detroit, and Seattle) in which infant ratios of 1:4 or 2:7 were required were observed to have significantly lower (better) ratios than the centers in Atlanta where the state required only a 1:7 ratio for infants. Differences in observed toddler and preschool ratios also mapped closely onto the relative stringency of state requirements. Centers in Boston and Detroit, with a 1:4 requirement, had significantly lower toddler ratios than did centers in Atlanta with its 1:10 requirement. Toddler ratios in Boston were also significantly lower than those in Phoenix. For

Table II. Observed Ratios and Group Sizes by Age Group of Classroom and Study Site^a

Quality indicator	Atlanta	Detroit	Boston	Phoenix	Seattle	Comparisons	<i>F</i>
Ratios							
Infant							
<i>M</i>	5.07	2.66	2.53	4.07	2.82	B,D,S<A	14.49 ^b
<i>SD</i>	1.66	1.05	0.79	0.78	0.77		
Toddler							
<i>M</i>	6.72	3.59	3.43	6.35	5.20	B,D<A	8.96 ^b
<i>SD</i>	2.56	0.64	0.46	2.50	2.28	B<P	
Preschool							
<i>M</i>	10.23	5.48	7.59	10.35	7.57	B,D,S<A,P	17.73 ^b
<i>SD</i>	4.01	1.60	3.40	4.95	3.08		
Group size							
Infant							
<i>M</i>	7.97	6.27	6.33	6.92	6.57		ns
<i>SD</i>	3.38	3.41	1.97	3.01	3.69		
Toddler							
<i>M</i>	10.80	8.82	9.71	8.89	8.63		ns
<i>SD</i>	4.20	3.19	5.38	3.12	4.18		
Preschool							
<i>M</i>	15.15	13.07	14.82	14.59	13.48		ns
<i>SD</i>	5.12	4.10	6.45	5.54	5.82		

^aAll means are least squares means. A = Atlanta, B = Boston, D = Detroit, P = Phoenix, S = Seattle.

^b $p < .001$.

preschoolers, centers in Boston, Detroit, and Seattle offered significantly better ratios than did centers in either Atlanta or Phoenix.

The one-way MANOVAs for site for all remaining quality variables were significant: $F(8, 436) = 6.39$ for the infant/toddler ITERS factors, $F(8, 558) = 8.83$ for the preschool ECERS factors, $F(16, 3905) = 34.66$ for the four staff-level variables, all $ps < .001$. Table III presents the means and standard deviations for the remaining quality variables. Staff turnover was significantly higher in the Phoenix centers than those in either Boston or Detroit. The Atlanta centers were second only to Phoenix in the average turnover rate, but this mean was not significantly different from those in the other sites.

Classroom quality, assessed with the appropriate caregiving and developmentally appropriate activity scales, differed significantly by site. In the infant and toddler rooms, caregiving was of significantly lower quality in Atlanta than in Boston, Detroit, or Phoenix. The centers in Seattle also offered significantly poorer caregiving to infants and toddlers than did centers in Detroit. For preschoolers, the quality of caregiving was significantly higher in Boston and Detroit than in Atlanta. With respect to the activities

Table III. Turnover, Classroom Quality, Staff-Child Interaction, and Staff Qualifications by Study Site^a

Quality indicator	Atlanta	Detroit	Boston	Phoenix	Seattle	Comparisons	F
Turnover (%)							
<i>M</i>	53	29	27	65	40	B,D<P	7.52 ^c
<i>SD</i>	0.47	0.17	0.23	0.63	0.29		
Caregiving: infants and toddlers							
<i>M</i>	3.61	4.72	5.32	4.34	4.05	B,D,P>A	10.15 ^c
<i>SD</i>	1.18	1.01	1.64	1.03	1.15	D>S	
Activities: infants and toddlers							
<i>M</i>	3.15	3.88	4.24	3.67	3.09	B,D>A,S	7.83 ^c
<i>SD</i>	1.03	0.77	1.34	0.90	0.88		
Caregiving: preschool							
<i>M</i>	4.02	4.61	4.63	4.51	4.25	B,D>A	4.00 ^b
<i>SD</i>	0.96	0.80	1.09	1.03	1.00		
Activities: preschool							
<i>M</i>	3.29	4.28	3.50	3.61	3.19	B>A,D,S,P	9.40 ^c
<i>SD</i>	1.10	0.82	1.22	0.99	0.95		
Harshness							
<i>M</i>	16.17	14.44	14.66	14.83	14.05	B,D,S,P<A	9.15 ^c
<i>SD</i>	4.29	4.26	4.80	3.89	4.14		
Sensitivity							
<i>M</i>	23.20	27.90	31.90	28.47	29.94	B,D,P,S>A	69.51 ^c
<i>SD</i>	5.20	5.09	8.28	5.36	6.88	D>A,B,P,S, S>B	
Detachment							
<i>M</i>	6.64	6.83	5.75	5.69	6.41	D,P<A,B	9.74 ^c
<i>SD</i>	2.79	2.73	2.88	1.97	2.81		
Early childhood training							
<i>M</i>	1.04	2.23	1.30	1.15	1.57	B>A,D,P,S	28.93 ^c
<i>SD</i>	1.20	1.62	1.42	1.23	1.55	S>A,P	

^aAll means are least squares means, with the exception of turnover rates, which were run as an ANOVA. A = Atlanta, B = Boston, D = Detroit, P = Phoenix, S = Seattle.

^b*p* < .01.

^c*p* < .001.

subscale, infant and toddler classrooms in Boston and Detroit offered significantly higher quality care than did classrooms in Atlanta or Seattle. Preschool classrooms in Boston offered significantly more appropriate activities than did those in all other sites.

Variation in the staff-level quality variables did not map as closely onto the varying stringency of state regulations as did the other quality variables. Teachers in Atlanta were observed to be significantly more harsh with the children in their care than were the teachers in all other sites. However, teachers in both Atlanta and Boston were observed to be more detached than were teachers in Detroit and Phoenix. The teachers' sensitivity towards the children also varied significantly by site, such that teachers in Atlanta were significantly less sensitive than those in all other sites,

and teachers in Detroit were significantly more sensitive than those in all other sites. In addition, teachers in Boston were significantly less sensitive than those in Seattle. With respect to the early childhood training of the teachers, those in Boston had significantly more training, on average, than did the teachers in all sites. Teachers in Seattle had significantly more training than those in Atlanta or Phoenix.

Effects of Compliance with the FIDCR

Table IV presents the means and percentage of centers in each site that complied with none, some, and all of the FIDCR regulations governing ratios, group size, and staff training. A one-way ANOVA, with site as the independent variable, run on the average compliance score revealed that Boston centers were significantly more fully in compliance with the FIDCR than were the centers in Phoenix or Atlanta, $F(4, 222) = 14.05, p < .0001$. The centers in both Detroit and Seattle were also more fully in compliance than were the Atlanta centers.

Table V, which presents the means and standard deviations for each of the compliance groups, reveals significant differences in the quality of care based on the center's degree of compliance with the FIDCR: $ps < .001$ for all MANOVAs: $F(6, 438) = 12.49$ for the infant/toddler ITERS factors, $F(6, 560) = 4.81$ for the preschool ECERS factors, $F(12, 3244) = 11.52$ for the four staff-level variables.

Staff turnover rates were significantly higher in centers that met none of the FIDCR provisions than in those that met all of the provisions. The quality of caregiving and the appropriateness of the activities offered to the children also differed significantly for centers that showed varying degrees of compliance with the FIDCR. In the infant and toddler rooms, caregiving was of significantly lower quality in the centers that met none of the FIDCR provisions than in the centers that met some or all of the

Table IV. Compliance of Center by Study Site

Site	No. of provisions met ^a			
	None	1	2	3
Atlanta	21.7	67.4	10.9	0
Boston	0	36.4	20.5	43.2
Detroit	6.7	35.6	35.6	22.2
Phoenix	20.0	44.4	31.1	4.4
Seattle	8.5	40.4	27.7	23.4

^aNumbers in the table are percentages of centers.

Table V. Turnover, Classroom Quality, Staff-Child Interaction, and Staff Qualifications by FIDCR Compliance^a

Quality indicator	No. of FIDCR provisions met				Comparisons	F
	None	1	2	3		
Turnover (%)						
<i>M</i>	65	42	45	29	0>3	4.31 ^b
<i>SD</i>	0.53	0.47	0.33	0.21		
Caregiving: infants and toddlers						
<i>M</i>	3.04	4.25	4.05	5.51	1,2,3>0	21.28 ^c
<i>SD</i>	0.95	1.15	1.18	0.97	3>1,2	
Activities: infants and toddlers						
<i>M</i>	2.45	3.62	3.37	4.12	1,2,3>0	18.72 ^c
<i>SD</i>	0.56	0.98	1.07	0.70	3>2	
Caregiving: preschool						
<i>M</i>	3.73	4.40	4.38	4.73	1,2,3>0	7.26 ^c
<i>SD</i>	0.88	1.05	1.00	0.87	3>2	
Activities: preschool						
<i>M</i>	2.76	3.67	3.49	3.85	1,2,3>0	7.90 ^c
<i>SD</i>	0.76	1.19	1.11	0.93		
Harshness						
<i>M</i>	15.91	14.63	15.29	14.11	1,3<0	6.90 ^c
<i>SD</i>	4.78	4.30	4.52	3.63	3<2	
Sensitivity						
<i>M</i>	25.58	27.46	29.42	30.23	1,2,3>0	19.60 ^c
<i>SD</i>	6.91	6.87	7.11	6.28	2,3>1	
Detachment						
<i>M</i>	6.40	6.36	6.07	6.22		ns
<i>SD</i>	2.38	2.83	2.67	2.59		
Early childhood training						
<i>M</i>	0.95	1.36	1.49	1.93	1,2,3>0	15.24 ^c
<i>SD</i>	1.15	1.39	1.48	1.66	3>1,2	

^aAll means are least squares means, with the exception of turnover rates, which were run as an ANOVA. A = Atlanta, B = Boston, D = Detroit, P = Phoenix, S = Seattle.

^b $p < .01$.

^c $p < .001$.

provisions. And, caregiving in the centers that met some (either one or two) of the provisions was of significantly lower quality than in the centers that met all of the provisions. For preschoolers, the quality of caregiving was significantly poorer in centers that met none of the provisions compared to centers that met some or all of the provisions, and in centers that met two of the provisions compared to those that met all three. With respect to the activities subscale, infant and toddler classrooms in centers that met none of the provisions were of significantly poorer quality than were classrooms in centers that met some or all of the provisions, and those that met two of the provisions were of poorer quality than those that met all three. Preschool classrooms in centers that met none of the provisions

offered significantly less appropriate activities than did those that met some or all of the provisions.

Variation in the staff-level quality variables was also significantly associated with FIDCR compliance, but the univariate analyses showed effects only for staff harshness, sensitivity, and early childhood training. Teachers in centers that met none of the FIDCR provisions were observed to be significantly more harsh with the children in their care than were the teachers in centers that met one or all three, but not two, of the provisions. In addition, teachers in centers that met two of the provisions were significantly more harsh than were teachers in centers that met all three of the provisions. With respect to sensitivity, teachers in centers that met none of the provisions were significantly less sensitive than teachers in centers that met some or all of the provisions, and teachers in centers that met only one of the provisions were significantly less sensitive than teachers in centers that met two or all three of the provisions. Teachers in centers that met none of the provisions also had significantly less early childhood training than teachers in all other centers and those in centers that met all of the provisions had significantly more early childhood training than did teachers in all other centers.

Given these differences in quality based on FIDCR compliance, it is of interest to know which of the FIDCR provisions—ratios, group size, or training—were most often violated by the noncomplying centers. Of the 227 centers, 185 were not in full compliance with these three FIDCR provisions. Of these 185 centers, only 20% failed to meet the training requirement. However, 82.7% failed to meet the ratio requirements and 79.3% failed to meet the group size requirements.

Effects of Auspice

The auspice of the centers also significantly distinguished centers that provided varying quality of care. The MANOVAs for the structural quality measures were $F(6, 150) = 2.31, p < .05$ for infants; $F(6, 272) = 4.54, p < .001$ for toddlers, $F(6, 532) = 8.87, p < .001$ for preschoolers. The MANOVAs for the remaining quality measures were: $F(6, 438) = 10.79$ for the infant/toddler ITERS factors, $F(6, 560) = 15.99$ for the preschool ECERS factors, $F(12, 3244) = 10.64$ for the four staff-level variables, all $ps < .001$. Table VI presents the means and standard deviations for the ratio and group size measures. Table VII presents these data for all other quality variables.

The for-profit chains were observed to have significantly higher (poorer) ratios than were the nonsectarian nonprofit centers for all age

Table VI. Observed Ratios and Group Sizes by Age Group of Classroom and Auspice^a

Quality indicator	For profit		Nonprofit		Comparisons	F
	Independent	Chain	Nonsectarian	Sectarian		
Ratios						
Infant						
<i>M</i>	4.31	4.60	3.25	3.83	N<C	2.73 ^b
<i>SD</i>	1.93	0.59	1.41	1.25		
Toddler						
<i>M</i>	6.52	6.95	4.74	5.08	N<C,I	6.95 ^c
<i>SD</i>	2.57	2.62	2.11	2.14		
Preschool						
<i>M</i>	9.58	11.45	6.76	7.38	N<C,I S<I	14.95 ^c
<i>SD</i>	4.95	3.35	2.76	2.47		
Group Size						
Infant						
<i>M</i>	6.94	8.13	7.26	5.44		ns
<i>SD</i>	3.74	3.44	2.85	2.30		
Toddler						
<i>M</i>	9.71	8.95	9.96	9.29		ns
<i>SD</i>	4.45	3.25	3.82	3.05		
Preschool						
<i>M</i>	14.51	16.65	14.43	12.24	C>S	3.43 ^b
<i>SD</i>	5.76	4.13	5.67	4.23		

^aAll means are least squares means. I = independent, C = chain, N = nonsectarian, and S = sectarian.

^b*p* < .05.

^c*p* < .001.

groups. The independent for-profit centers also had significantly higher ratios for toddlers and preschoolers than did the nonsectarian nonprofit centers. For preschoolers only, the independent for-profit centers also differed significantly from the sectarian nonprofit centers.

Group size failed to differentiate centers based on their auspice, with one exception. The for-profit chains were observed to have significantly larger preschool groups than were the sectarian nonprofit centers.

Staff turnover was significantly higher in the for-profit chains than in either the religious or nonreligious nonprofit centers, and in the independent for-profit centers than in the nonreligious nonprofit centers.

The quality of caregiving and the appropriateness of the activities offered to the children also differed significantly for centers of differing auspices. In the infant and toddler rooms, the quality of the caregiving and of the activities was significantly lower in the independent for-profit centers and the chains than in the nonsectarian nonprofit centers. In addition, the quality of the activities for infants and toddlers was significantly lower in the sectarian centers than in the other nonprofit centers. For preschoolers,

Table VII. Turnover, Classroom Quality, Staff-Child Interaction, and Staff Qualifications by Auspice^a

Quality indicator	For profit		Nonprofit		Comparisons	F
	Independent	Chain	Nonsectarian	Sectarian		
Turnover (%)						
<i>M</i>	51	74	30	36	N,S<C	8.01 ^b
<i>SD</i>	0.54	0.47	0.23	0.23	N<I	
Caregiving: infants and toddlers						
<i>M</i>	3.72	3.79	4.74	3.98	N>I,C	11.70 ^b
<i>SD</i>	1.29	0.91	1.18	0.91		
Activities: infants and toddlers						
<i>M</i>	2.97	3.38	4.06	3.14	N>I,C	21.24 ^b
<i>SD</i>	0.88	0.76	0.97	1.02	N>S	
Caregiving: preschool						
<i>M</i>	4.05	4.30	4.73	4.57	N,S>I	9.41 ^b
<i>SD</i>	1.01	0.82	0.99	0.90		
Activities: preschool						
<i>M</i>	3.05	3.56	4.24	3.38	N,C>I	26.97 ^b
<i>SD</i>	0.92	0.82	1.10	0.97	N>S	
Harshness						
<i>M</i>	15.40	15.18	14.35	14.54	N<I	5.26 ^b
<i>SD</i>	4.70	4.01	4.03	4.10		
Sensitivity						
<i>M</i>	27.36	27.76	28.99	28.99	N>I	5.24 ^b
<i>SD</i>	7.25	6.21	6.65	7.24		
Detachment						
<i>M</i>	6.22	5.95	6.43	6.15		ns
<i>SD</i>	2.60	2.49	2.77	2.87		
Early childhood training						
<i>M</i>	1.18	1.16	1.94	1.15	N>I,C,S	28.04 ^b
<i>SD</i>	1.33	1.17	1.57	1.39		

^aAll means are least squares means, with the exception of turnover rates, which were run as an ANOVA. I = independent, C = chain, N = nonsectarian, and S = sectarian.

^b $p < .001$.

the quality of caregiving was significantly poorer in the independent for-profit centers than in either group of nonprofit centers. The quality of the activities in the preschool rooms was significantly poorer in the independent for-profits than in either the chains or the nonsectarian nonprofit centers and in the sectarian than the nonsectarian nonprofit centers.

Variation in the staff-level quality variables was also significantly associated with auspice, but the univariate analyses showed effects only for staff harshness, sensitivity, and early childhood training. Teachers in the independent for-profit centers were significantly more harsh and less sensitive than teachers in nonsectarian nonprofit centers. Teachers in both types of for-profit centers had significantly less early childhood training than those

in nonsectarian nonprofit centers and teachers in the religious centers had significantly less training than those in nonsectarian nonprofit centers.

Our final analysis examined differences in degree of compliance with the FIDCR based on center auspice. Table VIII presents the percentages of centers of each auspice in full, partial, or no compliance with the FIDCR. The chi-square, $\chi^2(3) = 8.48, p < .001$, revealed that nonprofit centers were significantly more likely to be in full compliance and significantly less likely to be totally out of compliance with the FIDCR than were for-profit centers.

DISCUSSION

Ecological models of research have directed attention to the potential impact of public and private policies on the quality of children's environments. Growing interest in this level of analysis has not, however, been matched by empirical efforts to document policy effects. In this context, the most important contribution of the research reported here lies in the consistency with which it documents associations between child care policy—both regulatory and financial-legal dimensions of policy—and the quality of the child care environments that children experience on a daily basis. Quality of care varied systematically and significantly with the state in which the centers resided, the centers' degree of compliance with the most recent set of proposed federal child care standards, and the financial-legal auspices under which the centers operated.

Regulatory Effects

Centers that resided in states with more stringent child care regulations tended to offer higher quality care than did centers that resided in

Table VIII. Associations Between Center Auspice and Degree of Compliance with the FIDCR

Auspice	No. of provisions met ^a			
	None	1	2	3
Independent, for profit	19.1	46.1	25.8	9.0
Chain, for profit	16.7	50.0	33.3	0
Nonsectarian, nonprofit	2.4	47.0	20.5	30.1
Sectarian, nonprofit	10.8	35.1	29.7	24.3

^aNumbers in the table are percentages of centers.

states with relatively lax regulations. This pattern was most characteristic of those dimensions of quality—ratios and staff training—that are regulated by the states, although differences in the sites' average staff turnover rates also mapped closely onto the relative ranking of the regulations. However, the quality of caregiving, appropriateness of the activities, and the specific teacher behaviors that were observed, while significantly associated with site, corresponded less closely to the stringency of the states' regulations. These dimensions of quality are not directly regulated and are likely affected by aspects of care that are quite far removed from the purview of licensing, such as the qualifications of the center director, the amount of supervision that occurs, and the adult work environment.

This pattern of results linking state regulatory stringency to quality of care has direct implications for efforts to upgrade state child care regulations. The data suggest that such efforts will likely produce more developmentally beneficial child care environments for young children.

Compliance with the FIDCR also distinguished lower and higher quality centers on dimensions other than the ratio, group size, and training provisions by which we determined compliance. Centers in full compliance, as compared to partial or noncompliance, with the FIDCR had significantly lower staff turnover rates, higher quality of caregiving and of classroom activities, less harsh and more sensitive teachers, and more teachers with specialized training. The significant differences that emerged for centers in partial and full compliance suggest that the full complement of ratio, group size, and training provisions must be met to assure high quality care. Given that for the centers not in full compliance, the ratio and group size requirements were far more likely to be "failed" than were the training requirements, these provisions appear to be particularly important regulatory dimensions of quality.

These conclusions about regulatory effects on quality of care are based on two assumptions that require further examination. First, we have assumed that the differences found for centers in different study sites are associated with variation in the stringency of the state child care regulations that applied to each site. We did not, however, directly assess the influence of state regulations and, as a result, cannot rule out the possibility that other unmeasured factors that distinguished our sites (e.g., unemployment rates, training opportunities for child care providers) may explain the site effects. The teasing apart of state-level effects, particularly those associated with regulation, on the quality of child care is an important direction for future research.

Second, we have assumed that quality variation based on compliance with the FIDCR can provide data about the possible effects of national child care standards. However, the FIDCR have not been implemented

and, as a consequence, we cannot generalize from the effects of voluntary compliance to the context of mandatory federal regulation. It has been postulated, for example, that one effect of mandatory federal regulations would be to drive poorer quality centers out of the market thus creating a supply shortage (Lehrman & Pace, 1985; Orton & Langham, 1980). Research that examines the positive and negative consequences of mandatory regulation is sorely needed. Although it is a challenge to ponder the design of such a study, pre- and posttest studies of states that toughen their child care regulations could provide a reasonable assessment of how the imposition of federal standards would affect both the supply and quality of local child care markets.

Similarly, in some states, centers that receive government funds are required to comply with more stringent standards than are nonsubsidized centers. These two classes of centers offer an obvious comparison with which to examine the effects of imposing presumably more stringent federal standards. There is some evidence to suggest, for example, that federally subsidized centers that were required to comply with federal standards in the late 1970s had better staff:child ratios and offered a broader range of supplementary services than did nonsubsidized centers that were exempt from the federal standards (Grotberg, 1980).

In addition to pointing to directions for future research, the findings reported here have important implications for our interpretations of previous research on the quality of child care. The child development literature on child care quality has been restricted to single-site studies that fail to consider the influence of the local regulatory, market, and political context within which child care operates. If the developmental effects of care are examined in a site characterized by relatively low-quality care (e.g., Atlanta), it is likely that detrimental effects will be documented, whereas the opposite portrait of child care effects would likely emerge in a high-quality site. A systematic review of the existing literature with this framework in mind would be extremely useful.

Auspice Effects

The finding that quality of care was generally poorer in for-profit than in nonprofit centers corroborates prior evidence that for-profit centers, on average, offer children less optimal care than do nonprofit centers (Coelen et al., 1979; Kagan & Newton, 1989; Keyserling, 1972). What these findings add to this literature is evidence that there is variation within these two auspices and also across different measures of quality and for quality outcomes for different ages of children. The quality of care in for-profit chains

sometimes differed significantly from what we observed to typify independent for-profit centers and, in general, church-affiliated nonprofit centers were of lower quality than nonsectarian nonprofit centers. With respect to age, although chains did not differ from the nonprofit centers in the quality of the activities they offered preschoolers, they did offer significantly less appropriate activities and lower quality caregiving to infants and toddlers.

These findings raise the important question of *why* auspice influences quality. In general, although there has been ample attention to the various distinctions between profit and nonprofit service delivery, particularly in the area of health and mental health care (Estes & Alford, 1990; Pattison & Katz, 1983; Simons, 1989), the relation between auspice and quality is not well understood. Assumptions about contract failure offer one framework for understanding the sources of auspice-related differences in quality, however the data we report do not provide a complete assessment of this theory.

Another influential distinction between nonprofit and for-profit child care concerns the distribution of center resources to aspects of care that are or are not associated with quality of care. For example, several studies have linked staff salaries to turnover (Hyson, 1982; Jorde-Bloom, 1988; Kontos & Stremmel, 1987; Whitebook, Howes, Friedman, & Darrah, 1982; Whitebook et al., 1990) and to the observed quality of caregiving (Whitebook et al., 1990). The for-profit centers that were examined in this study spent a smaller proportion of their income on staff salaries and, in fact, paid their staff significantly poorer salaries than did the nonprofit centers (Whitebook et al., 1990). Other explanations are also plausible, including possible auspice-based differences in access to in-kind resources and subsidies (see Culkin, Morris, & Helburn, 1991), in the employment preferences of trained child care teachers, in governance and decision-making, and in philosophies of care.

These findings must also be placed in the broader policy context of the increasing privatization of child care, and other services, in the United States (Kahn & Kamerman, 1987; Simons, 1989). Privatization refers to the shift of power and investment from the government to the private sector, and the realignment of federal involvement from supply-side to demand-side support (Kagan, 1991). In the last decade, nonprofit services, including child care services, have absorbed large losses of government support. At the same time, for-profit services have proliferated in a wide range of health and service sectors, including child care (Kahn & Kamerman, 1987; Simons, 1989).

This trend has fueled tensions between for-profit and nonprofit providers of child care, with claims of greater cost-effectiveness and re-

sponsiveness to parent needs on the part of for-profit providers and claims of higher quality and greater equity of access to care for low-income families on the part of nonprofit providers. Of immediate concern is the combined impact of the growing share of center-based care that is provided by for-profit entities and the growing documentation in support of the nonprofits' claims that for-profit programs provide lower quality care. The implications for children are potentially quite negative. Moreover, the for-profit sector has traditionally opposed state and federal efforts to upgrade child care regulation, thereby adding to the potential negative effect of privatization on the quality of child care.

Policy Implications

This research reveals the significant association between regulation, nonprofit status, and quality of care, thereby implying an association between regulation, auspice, and positive outcomes for children in child care (see Phillips, Ricciuti, Kiernan, Howes, & Whitebook, in press). The policy implications of this finding are far-reaching, three of which are particularly timely. One set of implications addresses assumptions about parental choice that currently prevail in policy debates about regulation. The second set of implications focuses on the current balance of federal and state responsibility for child care regulation. The third concerns the role of parent education in an increasingly diversified child care market.

Contemporary policy debates about child care quality have been framed around a fundamental tension between enhancing regulation and enhancing parental choice. Efforts to upgrade state regulations or to impose federal regulations are portrayed as restricting parental choice insofar as they may drive some programs out of the market. Our data indicate that, in fact, these efforts to improve regulation would likely improve the quality of children's daily child care settings. Assuming that parents do not seek to place their children in low-quality care, we can conclude that efforts to polarize regulation and parental choice are unfounded.

The federal government has traditionally deferred to the states in the area of child care regulation. Yet, the data reported here concerning the uneven quality of care that is required by state regulations, the link between state regulation and the actual quality of care that children experience, and the suggested association between federal regulation and quality imply that this balance of state-federal responsibility is not optimal for assuring quality child care. We, therefore, propose an expanded federal role in child care regulation.

The accumulated data about center auspice and quality notwithstanding, a blend of profit and nonprofit child care centers is likely to be an enduring feature of the center-based child care delivery system in the United States. This feature, when placed in the context of a weak regulatory system, suggests a significant role for parent education about the key ingredients of quality care and for parental monitoring of their children's care settings. To the extent that for-profit centers are responsive to consumer demand and satisfaction, assuring that parents are educated and assertive consumers may be the only immediately promising avenue for improving the quality of care offered by this large sector of the center market.

In sum, this research illustrates the importance of adopting ecological models, and including measures of macrosystem influence, when examining the quality and effects of child care. Examining multiple levels of analysis, including consideration of policy influences, offers the opportunity to generate more creative directions for future research in child care and to inform important and timely debates about child care policy.

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