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Child Care Use by Low-Income Single Mothers of Preschoolers Born Preterm Versus Those of Preschoolers Born Full Term

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Abstract

This study describes prewelfare reform child care use by 64 primarily low-income single mothers (65.6% African American) with preschoolers (half born preterm). Forty percent used child care for more than 75% of their children's lives, 20% did when not employed. Preschool children born preterm were more likely to receive child care from nonrelatives throughout their lives than children born full term. Children with health problems used a greater number of child care arrangements. Findings suggest addressing child care issues with both employed and nonemployed mothers and adequacy of child care for children with special needs.

Studies of Families with children born preterm and their use of child care are limited. This is especially true for low-income single-mother families where the rate of preterm birth is greater (National Center for Health Statistics, 1995). Two thirds of single mothers (67.5%) with children younger than 6 years are employed (Bureau of Labor Statistics, 2002), and the rate of employment may not be diminished by a preterm birth (Youngblut, Singer, Madigan, Swegart, & Rodgers, 1997). The few studies on pattern and intensity of child care experienced by young children aggregate children from single- and two-parent families and those with and without health problems. Little is known about pattern and intensity of child care use from infancy to preschool age, especially for preschool children born preterm and those in low-income single-mother families, or about factors related to child care use in this group.

Review of The Literature

There is a dearth of published research examining effects of child factors on use of nonparental child care, especially for infants and preschoolers born prematurely. Booth and Kelly (1998) found that infants (most born < 2,000 g) with diagnosed developmental delays and at risk for delays were more likely to experience exclusive maternal care than infants developing normally (from the NICHD child care study). Infants developing normally entered child care at an earlier age ($M = 3.9$ months) than those at risk for delay ($M = 6.2$ months) and those diagnosed with delays ($M = 6.5$ months). At 15 months, infants with diagnosed delays spent an average of 24 hr/week in child care, significantly less than the respective rates of 30 and 31 hr/week for those at risk and for those developing normally.

Infants at risk for developmental delay had the fewest number of concurrent child care arrangements compared with infants with developmental delays and those with normal development (Booth & Kelly, 1998). Normally developing infants were more likely to be in nonrelative care or at a child care center; conversely, infants at risk and those with diagnosed

delays were more likely to receive care from a relative or their other parent. Overall, 74% of the at-risk infants and 76% of the infants with diagnosed developmental delays received care from their mothers, fathers, or relatives compared with only 52% in the normally developing group of infants. This finding is similar to that of Warfield and Hauser-Cram (1996), who found that 64% of their sample had a relative or at-home care for children with disabilities.

A child's health status may affect whether the mother enters or reenters the workforce and the number of hours per week she is employed (Booth & Kelly, 1998, 1999) and thus may indirectly affect the child's participation in child care. In their study of families with 5-year-old children with disabilities, Warfield and Hauser-Cram (1996) found that a child's type of disability (Down's syndrome, motor impairment, or developmental delay) did not affect number of hours per week in child care but that the mother's employment status did. Mothers employed full time used an average of 30 hr/week of child care compared with an average of 17 hr for mothers employed part time.

At 1 year postbirth, less than 25% of the mothers with at-risk infants or infants with developmental delays were employed or in school for more than 30 hr/week compared with 37% of the mothers with normally developing infants (Booth & Kelly, 1998). More than half of the mothers in the at-risk and diagnosed groups were employed or in school less than 10 hr/week compared with 42% of mothers with normally developing infants. These differences remained significant when prenatal employment/school attendance was controlled. However, Youngblut et al. (1997) found no differences in the proportion of single mothers employed or number of hours employed per week between mothers with preschoolers born preterm and those with preschoolers born at term.

Research on factors affecting use of child care by healthy children has focused on the child's age at entry into care, parents' education, racial/ethnic differences, maternal employment, and family composition. The aspects of child care use investigated vary across studies and the results are conflicting. A number of studies have found that children who enter some form of nonparental child care do so approximately by the age of 6 months (Booth & Kelly, 1998; Kisker & Silverberg, 1991; The NICHD Early Child Care Research Network, 1997), although children with special needs often enter child care later (Booth & Kelly). Singer, Fuller, Keiley, and Wolf (1998) found that the proportion of children in nonparental care increases with the children's age; however, the rate of increase is fairly small. Parents with higher education, as compared with those with lower than a high school education, are more likely to use nonparental care for young children, especially in single-parent families (Singer et al., 1998). Nonparental care was used by 72% of single parents with some college education but only by 48% of single parents with lower than a high school education.

Effects of race/ethnicity on child care use differs somewhat across studies. Nationally, for children younger than 5 years, a higher proportion of Black families (75%) than White (64%) and Latino families (46%) use nonparental care (Hofferth, West, Henke, & Kaufman, 1994). African American children also enter alternate child care at younger ages than do white and Hispanic children (Singer et al., 1998). African American families were more likely than White or Hispanic families to use care by relatives for infants and toddlers and day care centers for preschool children (Early & Burchinal, 2001). In African American families, use of relative care was greater for younger single mothers who were employed part time, in families with higher incomes, families with more than one preschool child, and families with a child younger than 1 year (Brewster & Padavic, 2002). In studies of Latino families, care by relatives was the most common type of child care arrangement other than the spouse for Mexican American families. White families used child care centers, and Chinese families used paid sitters (Becerra & Chi, 1992). Buriel and Hurtado-Ortiz (2000) found that Latina mothers relied on relatives for child care, especially United States-born Latina mothers—54% of United States-born

versus 34% of foreign-born Latina mothers. Gestational age at birth was not reported in these studies.

Child care use varies with the mother's employment. Infants of part-time employed mothers entered alternate care earlier and spent more time per week in alternate care than did infants of fulltime employed mothers and infants of nonemployed mothers (The NICHD Early Child Care Research Network, 1997). In other studies, the intensity of child care use increased with an increase in the number of hours per week the mother worked (Becerra & Chi, 1992; Warfield & Hauser-Cram, 1996).

Family composition (single- vs. two-parent families; number of children) is also related to the use of alternate child care. Low-income single mothers were more likely to use relative and center care than did low-income two-parent families (Brayfield, Delch, & Hofferth, 1993). Children from single-parent families enter alternate child care at an earlier age than those from two-parent families, regardless of the mother's age at first birth, race, and education (Singer et al., 1998). In two studies, families with three or more children are much less likely to use nonparental child care than those with one or two children (Huston, Chang, & Gennetian, 2002; Singer et al., 1998).

In summary, there is little research on child care use for children born preterm; however, research with children with disabilities suggests that infants with health problems may enter child care at a later age for fewer hours per week and may use different types of child care as compared with normally developing infants. Research shows that healthy children who enter child care are most likely to do so early in their first year of life. The type of child care used varies with maternal race/ethnicity, education, and employment; family composition (single- or two-parent families; number of children); and child health. Little is known about these influences in low-income single-parent families throughout the preschool years for children born preterm. The aims of this study were (1) to compare the pattern (number and types of child care arrangements, change in arrangements, similarity of child care and maternal employment patterns) and intensity (age at entry, proportion of child's life, average number of hours in alternate child care) of child care use by children born preterm and those born full term and (2) to identify child, mother, and family factors related to the pattern and intensity of child care use by preschoolers in single-parent families.

Methods

Original Study

The data for this secondary analysis come from a larger data set of 121 single-mother families with preschoolers (3, 4, or 5 years old), 60 born preterm and 61 born full term (Youngblut & Brooten, 1999; Youngblut et al., 2001; Youngblut et al., 1997). The purpose of the larger study was to investigate the effects of maternal employment on preschoolers (half born preterm) and their families. Families in the preterm group were identified from the admission records of three Level III neonatal intensive care units (NICUs) in the Midwest; families in the full-term group were identified from birth records of newborn nurseries in two of these hospitals. All families with preterm infants and a systematic random sample of families with full-term infants born between 1988 and 1993 were sent a letter briefly describing the study; 71% of the eligible families agreed to participate and were included in the study.

Families were eligible to participate if the mother was not currently married and had not lived with a man serving in the father role for at least 6 months before recruitment. Inclusion criteria for children born preterm were as follows: born before 36 weeks of gestation, at an appropriate birth weight for gestational age, and hospitalized for at least 4 days in a Level III NICU at birth. Inclusion criteria for children born full term were as follows: born at term (38 and 42 weeks

of gestation), discharged home with the mother after birth, and had no siblings born preterm within 10 years of the study child's birth. For both groups, the child had to have the ability to progress intellectually. This was operationalized by asking mothers if they had been told that their child had more than 2 years of developmental delay. None of the families were excluded on this basis. Data were collected once within 1 month of the child's third, fourth, or fifth birthday.

Secondary Analysis

Sample—The sample for this study consisted of 64 single-mother families with preschoolers, 31 born preterm and 33 born full term. All families where the index preschool child has had experience with child care at some point in his or her life were selected for this study from the larger sample. All further descriptions refer to this subsample only. The mothers' ages ranged from 19 to 41 years ($M = 29.1$, $SD = 5.75$). Most mothers were African Americans (65.6%), had completed high school (84.4%), had never been married (65.6%), and had sole custody of the study child (91.8%). The mothers had been single for an average of 88.1% ($SD = 23.1\%$) of the index child's life. However, 55% of the index children saw their fathers at least once a month and 38.3% saw their fathers at least once a week. The families were primarily low income: 53.1% received public assistance, 50% received less than \$3,000 annually through the mother's employment, and 85.5% had total family incomes less than \$20,000 per year. Only 25% of the mothers received child support from the child's father. Thirty-nine percent of the study children had no siblings, 28% had one sibling, 20% had two siblings, and 13% had more than two siblings. Families in the preterm and full-term groups did not differ significantly on any of the demographic variables except for the child's birth weight and gestational age (Table 1).

About half of the children in the sample were boys (53.1%) and first born (53.1%). At birth, infants in the full-term group were 38 to 42 weeks gestation ($M = 39.8$, $SD = 1.52$) at birth and weighed 2,570 to 4,965 g ($M = 3,359.0$, $SD = 546.70$). Infants in the preterm group were 24 to 35 weeks into gestation ($M = 30.1$, $SD = 3.30$) at birth and weighed 470 to 2,460 g ($M = 1,387.7$, $SD = 576.96$). Nine preterm infants weighed less than 1,000 g, 11 weighed between 1,000 and 1,499 g, and 11 weighed between 1,500 and 2,500 g.

The average length of stay in an NICU at birth for the preterm children was 46.3 days ($SD = 33.96$ days; range, 4–122 days). One third of the preterm infants were discharged by the age of 1 month, another third by the age of 2 months. Five preschoolers in the preterm group have had an intraventricular hemorrhage; three were Grade I, one was Grade II, and one was Grade IV. Two children had been diagnosed with cerebral palsy and two with bronchopulmonary dysplasia.

At the time of the study, 30 mothers (46.9%) were employed, 24 full time (≥ 30 hr/week) and 6 part time (< 30 hr/week). The average number of hours worked per week was 35 hr ($SD = 8.96$ hr). The women reported being employed for an average of 41.3% ($SD = 35.7\%$; range, 0%–99%) of the child's life; 11 women were employed for more than 90% of their child's life. Women's self-reported "usual" occupations were classified as primarily skilled or semiskilled (45.3%), followed by professionals (26.6%), homemakers (25%), and unskilled (3.1%).

Measures—A life history calendar (LHC) (Freedman, Thornton, Camburn, Alwin, & Young-DeMarco, 1988) was used to record each mother's employment history and each child's experience with alternate child care. The LHC constructed for the current study contained five segments (years), each with 12 blocks (months). Recording began with the month and year of the study child's birth. Major life events such as residential moves, births, and deaths were also recorded to aid the mother's memory. Validity and reliability of the LHC are enhanced through its use of memory cues, relating one event to other events that occurred at about the same time.

When Freedman et al. (1988) compared data obtained in 1980 about the respondents' current situation with data obtained retrospectively with the LHC in 1985 ($N = 900$), agreement ranged from 72% to 92%.

Mothers' Employment History—Mothers gave detailed descriptions of their employment patterns since the study child's birth on the LHC (Freedman et al., 1988). These included as to when they began employment after the child's birth, the jobs they have held, the months they started and stopped each job, and the number of hours employed per week in each job. From these data, the variables “proportion of the child's life with an employed mother” (number of months employed divided by child's age in months) and “pattern of maternal employment” were derived.

Experience with Child Care—Child care experiences were defined as situations where routine child care was provided by adults other than the child's parent(s) primarily for the mother's employment or education. Episodic babysitting so the parent(s) could go out for a couple hours was not considered “child care experience.” Mothers reported when each child care experience started and stopped, the type of child care used, and number of hours per week in that child care arrangement. From these data, variables describing the intensity and pattern of child care use over the child's life were derived. Intensity variables included age at entry, proportion of the child's life in child care (number of months in child care divided by age in months), and average number of hours in child care (in 6-month intervals and over the child's life). Pattern variables included number and types of child care arrangements, dominant and current types of child care arrangements, changes in child care arrangement, and similarity of child care and maternal employment patterns.

Change in Child Care Arrangement—Based on the child care data recorded on the LHC, families were placed in one of four groups to indicate changes in child care that children experienced: *no change*, *change in intensity* (the number of hours increased or decreased by more than 4 hr), *change in site* (the site of child care changed), and *change in both* (the hours changed by more than 4 hr and the site of child care changed).

Similarity of Child Care and Maternal Employment Patterns—This indicates the degree of match between a child's attendance at child care and the mother's employment/school participation each month. The pattern was assigned one of four possible values: (1) *identical*, mother's employment (or school attendance) pattern was the same as the child's pattern of child care; (2) *close*, mother's employment (or school attendance) pattern was similar to the child's pattern of child care (one may have lagged the other by 1 month); (3) *some similarity*, mother's employment (or school attendance) pattern was similar to the child's pattern of child care for several months but not for all; and (4) *no similarity*, mother's employment (or school attendance) pattern and child's pattern of child care shared no commonalities. Children's school attendance for kindergarten was not considered a child care arrangement because it is legally mandated and not at the discretion of the mother.

Child Health Problems—Each mother was asked to identify chronic health problems that her child was experiencing at the time of interview. Mothers of 16 preschoolers born preterm and 5 born full term (total of 21 children) identified 28 problems as follows: 14 respiratory (lung disease, asthma, chronic cough), 5 neurological (hyperactivity, seizures, cerebral palsy, headaches), and 1 each of hearing, not growing, allergies, and minor surgery. Health problems identified for the preschoolers born full term included 1 each of sickle cell anemia, anemia (unspecified), lead poisoning, heart murmur, and eczema. The child's health problems variable was scored as 0 (*present*) or 1 (*absent*).

Procedure—The study was approved by the human subjects review committees of the university and the three hospitals. A trained interviewer contacted the family to screen for inclusion criteria, answer questions, and schedule a data collection visit in the family's home. In the home, the interviewer further described the family's participation in the study and obtained informed consent before collecting data. Interviewers offered to read self-complete instruments to mothers.

Results

Preterm Birth and Pattern of Child Care Use

Number and Type of Child Care Arrangements—The average number of child care arrangements was similar for preschoolers born preterm ($M = 1.5, SD = .68$) and those born at term ($M = 1.3, SD = .63$), $t = 1.30, p = ns$. A greater proportion of preschoolers born preterm (73.3%) had received child care from nonrelatives since birth than those born full term (33.3%), $\chi^2(1, N = 64) = 3.70, p = .05$. However, this was not the case when the two groups were compared on their current child care arrangement, $\chi^2(1, N = 64) = 1.52, p = ns$.

Overall, the number of child care arrangements for the study children since birth ranged from one to four. Although 67.2% of the children were in the same child care arrangement throughout their lives, 18 children had experienced two arrangements and only 3 children had three or four arrangements. Types of nonparental arrangements were care by relatives, care by nonrelatives in the caregiver's home, and that through a day care center. Over the children's lives, the most commonly reported type of nonparental child care arrangement was care by relatives ($n = 10$; 15.6%) followed by care by nonrelatives in the caregiver's home ($n = 8$; 12.5%). At the time of data collection, the most common child care arrangement was that with a day care center ($n = 16$; 25%).

Change in Child Care Arrangements—Changes in intensity and/or site of child care did not differ statistically between preschoolers born preterm and those born at term using χ^2 tests (Table 2). Almost half of all the children ($n = 30$; 46.9%) experienced no change in intensity or site of child care. For children who experienced a change, 4 (6.3%) experienced a change in intensity, 12 (18.8%) experienced a change in site, and 15 (23.4%) experienced a change in both intensity and site. Five preschoolers born preterm and six born full term experienced at least one hiatus (>1 month) in alternate child care. Eight children experienced one hiatus and three experienced two periods without alternate child care. These periods of no alternate child care ranged from 2 to 28 months, and most periods (11/14) coincided with a hiatus in the mother's employment/school attendance.

Similarity of Child Care and Maternal Employment Patterns—Patterns of child care use and maternal employment/school attendance did not differ statistically between preschoolers born preterm and those born at term with χ^2 tests (Table 2). The child's pattern of child care and the mother's pattern of employment/school attendance were identical in 28 (43.8%) families and very similar in 11 (17.2%). Eight (12.5%) had somewhat similar patterns and 14 (21.9%) had very different patterns. Thus, in many cases, the child attended child care when the mother was working or in school; however, 13 of the 22 children with dissimilar patterns were in child care during periods when the mother did not report being employed or in school.

Preterm Birth and Intensity of Child Care Use

Age at Entry Into Child Care—Preschoolers born preterm entered alternate child care at a mean age of 17.5 months ($SD = 17.5$ months) compared with 19.3 months ($SD = 17.7$ months) for preschoolers born full term. This difference was not significant, $t = .38, p = ns$. Seven

children (four preterm, three full term) entered child care at the same time that their mothers entered employment ($M = 11.7$ months, $SD = 19.12$). For 15 children (8 preterm, 7 full term), the mothers entered employment after the child began child care. For 22 children (11 preterm, 11 full term), the mother's employment began before the child's entry into child care. Sixteen children (8 preterm, 8 full term) entered child care without the mother's being employed. This difference was not significant, $\chi^2(3, N = 60) = .14, p = ns$.

Overall, the children's ages ranged from 1 to 59 months ($M = 18.4, SD = 17.5$) when they entered alternate child care; 25 (39.1%) children entered child care by the age of 6 months and 33 (51.5%) by the age of 12 months. In families where the child entered child care first, mean age of the child at entry into child care was significantly lower ($M = 18.3$ months, $SD = 18.28$) than the child's age at the mother's entry into employment ($M = 30.1$ months, $SD = 15.35$), $t = 4.39, p = .001$. In families where the mother entered employment first, mean age of the child at entry into child care was significantly higher ($M = 18.45$ months, $SD = 17.01$) than the child's age at the mother's entry into employment ($M = 11.2$ months, $SD = 13.75$), $t = 2.74, p = .01$.

Proportion of the Child's Life in Child Care—No significant difference was found between preschoolers born preterm ($M = 60\%$, $SD = 33\%$) and those born full term ($M = 53\%$, $SD = 34\%$), $t = .80, p = ns$. Overall, children spent an average of 59.4% ($SD = 31.9\%$) of their lives in child care; 26 had been in child care for more than 75% of their lives and 15 for less than 25%.

Average Number of Hours in Alternate Child Care—The preterm and full-term groups did not differ significantly in mean number of hours in child care in any of the 6-month periods (t tests, .02–1.78; all $p > .05$). However, the pattern of mean hours per week in alternate child care was different for the groups (Figure 1). The full-term group showed an increase from the 0- through 6-month period to the 7- through 12-month period but relatively little change after 12 months. However, the preterm group showed a more gradual increase in mean number of hours up to the 31- to 36-month period, with relative stability after 36 months. At the time of the study, the amount of time in child care each week varied from 0 to 72 hr ($M = 23.8, SD = 9.39$). Nearly one third of the children (31.3%; 9 preterm and 11 full term) were in child care for at least 40 hr/week.

Factors Related to Pattern of Child Care

Relationships of child care pattern variables (number of child care arrangements, change in child care arrangements, similarity of child care and maternal employment patterns) with child variables (preterm/full-term birth, presence of child health problems), mother variables (race/ethnicity, education, proportion of child's life when employed), and family variables (total number of children in the family, family income) were examined.

Number of Child Care Arrangements—The number of child care arrangements was significantly correlated only with the presence/ absence of health problems (Table 3). Preschoolers with health problems were more likely to have used two or more child care arrangements (not simultaneously) than children without health problems, $\chi^2(4, N = 64) = 15.22, p = .004$.

Change in Child Care Arrangements—Groups representing the type of change in child care arrangements (no change, change in intensity only, change in site only, change in both intensity and site) did not differ significantly for preschoolers born preterm versus those born full term or for preschoolers with versus those without health problems with χ^2 tests (Table 2). Using one-way analysis of variance, these groups were significantly different on the proportion of the child's life when the mother was employed (Table 2). Post hoc testing with Scheffe's

tests revealed that mothers in the change-in-intensity group were employed for a significantly greater proportion of their children's lives than mothers in the no-change group.

Similarity of Child Care and Maternal Employment Patterns—Groups constituted based on the similarity of the mother's employment/school pattern and the child's alternate child care pattern (identical, close, some similarity, no similarity) did not differ significantly for preschoolers born preterm versus those born full term or for preschoolers with versus those without health problems with χ^2 tests (Table 2). However, using one-way analysis of variance, these groups were significantly different on the proportion of the child's life when the mother was employed (Table 2). On post hoc testing with Scheffe's tests, families with identical mother-child patterns reported a greater proportion of the child's life with an employed mother than families in the no-similarity group. Thus, mothers who were employed for most of their children's lives were more likely to change the amount of time their children spent in child care and to use child care so they could be employed.

Factors Related to Intensity of Child Care

Relationships of child care intensity variables (age at entry into child care, proportion of the child's life in child care, and average number of hours in alternate care per week) with child, mother, and family variables were examined with correlations (Table 3). A child's entry into child care at a younger age was significantly related to the mother's higher level of education and being employed for a greater proportion of the child's life. Greater proportion of the child's life in alternate child care was significantly related to higher maternal education, the mother's being employed for a greater proportion of the child's life, and higher family income. Greater number of hours in alternate child care per week was related to the mother's being employed for a greater proportion of the child's life and higher family income. Thus, greater participation in child care was related only to greater maternal education, greater maternal workforce participation, and higher family income.

Discussion

Study findings demonstrated little significant difference in child care use for preschoolers born preterm and those born full term. Change in intensity and pattern of child care use was not different between the two groups. The preterm and full-term groups did not differ in age at entry into child care, proportion of the child's life in child care, and the mean number of hours in child care. The proportion of children who entered child care at the same time, earlier, or later than when their mothers entered the workforce did not differ for the preterm and full-term groups. Children with health problems used more types of child care than those without health problems. Most of the pattern and intensity of child care use variables were related to the mothers' workforce participation.

About half of the preschool children in the larger study (Youngblut & Brooten, 1999; Youngblut et al., 2001; Youngblut et al., 1997) experienced child care at some point in their lives and about half of these children entered child care within the first year of life. The proportion of children who entered child care by the age of 6 months (39%) was higher in this sample of single-parent families than in the study by Singer et al. (1998). However, Singer et al.'s sample included both single- and two-parent families. Their finding that children in single-parent families entered child care earlier than those in two-parent families would account for the smaller proportion of their sample's children in child care by the age of 6 months.

The preschool children in this study spent an average of 59% of their lives in child care and 40% were in child care for more than 75% of their lives despite their low family incomes at the time of the study (half of the families received public assistance and had annual incomes <\$3,000). Number of hours in child care per week increased slowly from an average of 13 hr/

week in the first 6 months of life to an average of 27 hr/week as the child neared kindergarten age. One third of the preschool children were in full-time child care at the time of data collection—within 1 month of their third, fourth, or fifth birthday. About half of the children enjoyed considerable stability in their alternate care arrangements. They experienced only one care arrangement with little or no change in the number of hours they were in child care. In contrast, Capizzano and Adams (2000) found that 38% of children younger than 5 years nationally experience two or more regular child care arrangements each week. Although their sample included both single- and two-parent families, all the mothers were employed.

A mother's education and employment were related to the child's participation in child care. As in a previous study (Singer et al., 1998), more educated mothers entered their children in care at an earlier age and for a greater proportion of their preschool years. Mothers who were employed for greater portions of their children's preschool years entered their children in child care at an earlier age, for more hours per week, and for a greater proportion of the child's life. In more than half of the families, the mother's pattern of employment/school attendance and the child's pattern of child care participation were very similar, but a number of children participated in child care when their mothers were not working or in school. A longer history of maternal employment since the study child's birth was the only factor that distinguished families with identical mother-child patterns from those with very different mother-child patterns.

About half of the preschool children with child care experience in this secondary analysis were born preterm. Throughout the course of their lives, preschoolers born preterm were more likely to receive care from nonrelatives than those born full term. However, both groups of preschoolers were more likely to be in nonrelative care at the time of data collection. The pattern of increase in average number of hours per week in child care for preschoolers born preterm was different from that for those born full term, although this was not statistically significant. Preschoolers born full term showed a relatively large increase in hours in child care between the ages of 6 and 12 months; those born preterm showed a more gradual increase in average hours through the age of 36 months. Preschoolers born preterm were more likely to have nonrelatives as care providers than those born full term. Preterm birth was not related to any other child care pattern or intensity variables.

Children with health problems were more likely to experience two or more child care arrangements than children without health problems. In relation, Booth and Kelly (1998) found that children at risk for developmental delay had the fewest number of child care arrangements compared with children with developmental delays and children developing normally. The reason for our finding is not clear. It may reflect the need to change child care providers as a result of the increasing complexity of the child's health needs or the appearance of new health needs caused by later onset of the health problem. The change in child care arrangements may also provide the child with a care provider who is not overwhelmed with the child's challenging needs, similar to the need for respite for parents of children with complex care needs. It may also be that mothers whose children have complex health needs more easily become dissatisfied with the care provided and move the child in search of a more acceptable child care arrangement.

Total family income was related to greater child participation in child care, in both average number of hours per week and proportion of the child's life in care. Although higher family income could allow greater participation in child care, it is more likely that a higher family income is the result of the mother's longer and greater (for more hours each week) participation in the workforce. The number of children in the family was not related to the pattern and intensity of child care use. In contrast, Singer et al. (1998) found that families with three or more children were much less likely to use child care. Perhaps our finding is a result of the fact

that most of the families in this study (68.3%) had only one or two children and only six (12.1%) families had three or more children.

The study's findings hold important implications for practice, education, and research with single-parent families. Reform efforts to move welfare recipients into the workforce have affected many single mothers with young children, including those born prematurely and with disabilities. These mothers face considerable challenges finding employment because of limited education and skills that severely limit job choices and income. Many must work odd hours with inflexible schedules, and few have paid vacation or sick time (Kisker & Ross, 1997). Finding adequate child care under these circumstances is difficult, especially for infants and toddlers. This difficulty often is compounded when an infant is born with social and/or health risks or with special health needs (Warfield & Hauser-Cram, 1996).

The original study was conducted before welfare reform. During and after welfare reform, much concern was expressed regarding the effects of welfare-to-work mandates on family systems for both mothers and children. Study findings indicate that half of the children in the larger sample experienced child care (Youngblut & Brooten, 1999) and that 40% of the children in child care had been there for more than 75% of their lives. Although most of the use of child care was for the mother's employment, 20% of these low-income single mothers had chosen to place the child in child care although they were not employed. Thus, these women potentially would face fewer barriers in their transition into the workforce. In addition, the need to expand existing child care resources because of welfare reform may be less than expected because more than half of the children were already in child care although less than half (27%) of the mothers were employed.

For practitioners working with low-income single-mother families, there is a need to address child care issues regardless of whether the mother is employed or not. This assessment should include the parent's satisfaction with current child care arrangements and the ability of the current arrangement to meet the child's changing care needs. This is especially important for children with health problems or other chronic conditions because their conditions may change as they grow and require more complex care or more technical care. Our findings indicate that children with health problems experienced more child care arrangements than did children without health problems. Finding acceptable child care and maintaining the arrangement are often stressful for parents, even for those with healthy children. Caring for children with health problems can also be stressful for child care workers and necessitate a child's move. Deciding whether to move a child and then finding another arrangement increases the parent's stress.

Study findings indicate that child care pattern and intensity were similar for children born preterm and those born full term. Although not statistically significant, the participation of children born preterm in this sample lagged behind that of children born full term until the age of 30 months, with the biggest differences noted at the 7- through 12-month period and the 13- through 18-month period. Age in this study was not adjusted for prematurity. Because the gestational age of the preterm group at birth was about 10 weeks less, the lag may reflect the effect of gestational age. That is, children born 10 weeks preterm on average would be about 2.5 months behind their full-term counterparts. Parenting difficulties often associated with prematurity, especially those of feeding and irritability, may lead these mothers to delay entering their preterm infants into alternate child care or gradually increasing the number of hours they are in care each week. If age corrected for prematurity were considered, the lag in child care participation may disappear.

In summary, use of child care arrangements was relatively common in this sample of low-income single mothers with preschool children. As often seen with married mothers, child care was frequently used in conjunction with the mothers' employment or school attendance, but a

number of single mothers placed their children in child care when they were not employed or going to school. Preterm birth did not affect a child's participation in child care, but presence of health problems in the child did. Research is needed to further understand the use of child care by families with a child who has special health needs and across cultural groups.

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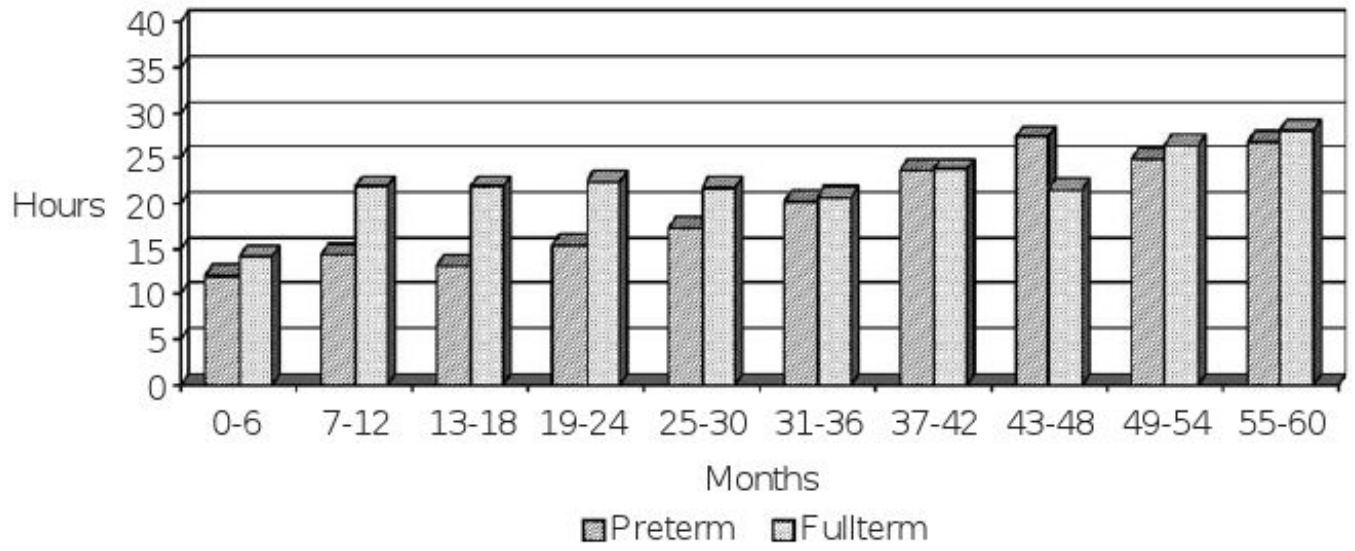


Figure 1. Average hours in alternate child care per week by age

Table 1
Comparison Between Families with Preschoolers Born Preterm and Those with Preschoolers Born Full Term

Characteristic	Preterm Group (<i>n</i> = 31)	Full-term Group (<i>n</i> = 33)	Statistic
Mother's age [<i>M</i> (<i>SD</i>)]	29.7 (6.40)	28.5 (5.10)	<i>t</i> = .83
Mother's race [<i>n</i> (%)]			$\chi^2 = 2.51$
White	8 (25.8)	13 (39.4)	
Black	23 (74.2)	19 (57.6)	
Hispanic	0 (0)	1 (3.0)	
Mother's educational attainment [<i>n</i> (%)]			$\chi^2 = 1.85$
<High school	3 (9.7)	7 (21.2)	
High school	9 (29.0)	10 (30.3)	
>High school	19 (61.3)	16 (48.5)	
Number of children [<i>M</i> (<i>SD</i>)]	2.1 (1.53)	2.2 (1.24)	<i>t</i> = .23
Proportion of child's life with a single mother [<i>M</i> (<i>SD</i>)]	.91 (.22)	.85 (.24)	<i>t</i> = 1.13
Family income [<i>n</i> (%)]			$\chi^2 = 1.28$
<\$20,000	24 (77.4)	29 (87.9)	
\$20,000–39,999	4 (12.9)	2 (6.1)	
≥\$40,000	3 (9.7)	2 (6.1)	
Mother's employment status [<i>n</i> (%)]			$\chi^2 = .07$
Employed	14 (45.2)	16 (48.5)	
Not employed	17 (54.8)	17 (51.5)	
Proportion of child's life with an employed mother [<i>M</i> (<i>SD</i>)]	.43 (.38)	.40 (.34)	<i>t</i> = .36
Child's age in months [<i>M</i> (<i>SD</i>)]	51.7 (8.83)	49.7 (10.17)	<i>t</i> = .88
Child's sex [<i>n</i> (%)]			$\chi^2 = .54$
Female	16 (51.6)	14 (42.4)	
Male	15 (48.4)	19 (57.6)	
Birth weight in grams [<i>M</i> (<i>SD</i>)]	1,387.7 (576.96)	3,359.0 (546.70)	<i>t</i> = 14.01 *
Gestational age at birth in weeks [<i>M</i> (<i>SD</i>)]	30.1 (3.30)	39.8 (1.52)	<i>t</i> = 14.97 *

* *p* < .01.

Table 2
Comparisons by Change Groupings and Similarity Groupings

	Change Group				Mother-Child Pattern Group				Statistic
	No Change (n = 30)	Change in Intensity (n = 4)	Change in Site (n = 12)	Change in Both (n = 15)	Identical (n = 28)	Close (n = 11)	Some Similarity (n = 8)	No Similarity (n = 14)	
<i>Child</i>									
Gestation									
Preterm [n (%)]	13 (41.9)	2 (6.5)	6 (19.4)	10 (32.3)	14 (45.2)	8 (25.8)	2 (6.5)	7 (22.6)	$\chi^2 = 4.26$
Full term [n (%)]	17 (56.7)	2 (6.7)	6 (20)	5 (16.7)	14 (46.7)	3 (10)	6 (20)	7 (23.3)	
Health problems									
Yes [n (%)]	8 (40)	0 (0)	7 (35)	5 (25)	7 (35)	6 (30)	2 (10)	5 (25)	$\chi^2 = 3.41$
No [n (%)]	22 (53.7)	4 (9.8)	5 (12.2)	10 (24.4)	21 (51.2)	5 (12.2)	6 (14.6)	9 (22)	
<i>Mother</i>									
Race									
White [n (%)]	11 (55)	2 (10)	4 (20)	3 (15)	10 (50)	3 (15)	2 (10)	5 (25)	$\chi^2 = .54$
Other [n (%)]	19 (46.3)	2 (4.9)	8 (19.5)	12 (29.3)	18 (43.9)	8 (19.5)	6 (14.6)	9 (22)	
Educational attainment									
<High school [n (%)]	8 (80)	1 (10)	1 (10)	0 (0)	2 (20)	2 (20)	2 (20)	4 (40)	$\chi^2 = 4.59$
High School [n (%)]	6 (35.3)	1 (5.9)	5 (29.4)	5 (29.4)	9 (52.9)	3 (17.6)	1 (5.9)	4 (23.5)	
>High school [n (%)]	16 (47.1)	2 (5.9)	6 (17.6)	10 (29.4)	17 (50)	6 (17.6)	5 (14.7)	6 (17.6)	
Proportion of child's life with an employed mother [M (SD)]	.30 (.30) [†]	.77 (.18) [†]	.52 (.42)	.47 (.34)	.56 (.36) [†]	.33 (.31)	.34 (.22)	.26 (.36) [†]	$F = 2.93^*$
<i>Family</i>									
Number of children [M (SD)]	2.4 (1.5)	2.3 (1.89)	1.3 (.65)	2.1 (1.13)	2.0 (1.39)	2.4 (1.75)	2.1 (.84)	2.1 (1.29)	$F = .18$
Income									
<\$20,000 [n (%)]	27 (51.9)	3 (5.8)	8 (15.4)	14 (26.9)	26 (50)	9 (17.3)	7 (13.5)	10 (19.2)	$\chi^2 = 7.96$
\$20,000–\$40,000 [n (%)]	2 (40)	0 (0)	2 (40)	1 (20)	2 (40)	1 (20)	1 (20)	1 (20)	
>\$40,000 [n (%)]	1 (25)	1 (25)	2 (50)	0 (0)	0 (0)	1 (25)	0 (0)	3 (75)	

* $p < .01$.

[†]Indicates significantly different groups.

Table 3
Correlations of Child Care Pattern and Intensity Variables with Mother, Child, and Family Variables

	Child Care Pattern	Child Care Intensity	Child Care Intensity	Child Care Intensity
	Number of Arrangements	Child's Age at Entry	Proportion of Child's Life in Child Care	Average Number of Hours per Week
Child variables				
Preterm/Full-term birth [*]	.16	-.05	.10	.12
Health problems [†]	-.26 [‡]	-.03	-.06	.02
Mother variables				
Race [§]	-.15	.14	.08	.03
Education	.19	-.26 [‡]	.28 [‡]	.18
Proportion of child's life with an employed mother	.24	-.54 ^{//}	.58 ^{//}	.60 ^{//}
Family variables				
Number of children	-.20	.11	-.24	-.24
Income	.05	-.18	.35 ^{//}	.38 ^{//}

* Codes: 1 = *preterm*; 0 = *full term*.

† Codes: 0 = *present*; 1 = *absent*.

‡ $p < .05$.

§ Codes: 1 = *White*; 0 = *other*.

// $p < .01$.