An Examination of Cross-Racial Comparability of Mother-Child Interaction Among African American and Anglo American Families

This study examined the cross-racial comparability of maternal quality of assistance and supportive presence coded from a video protocol using data from the Infant Health and Development Program for low-birth-weight, premature 30-month-olds and their mothers. Evidence of equivalence of measures is necessary before comparisons can be made across groups. Multiple-group mean and covariance structures analysis was used to demonstrate the invariance of the measures and make comparisons for Anglo American and African American treatment and comparison groups of dyads. Comparisons across groups indicated similar variances and correlation between child and maternal behavior. Differences were found between the mean scores, with Anglo American treatment families scoring the highest.

Social scientists are showing a growing awareness of the need to examine cross-cultural (including racial and ethnic) generalizability of family processes and interactions (Berry, 1989; Harkness & Super, 1995; Rohner & Cournoyer, 1994). In particular, developmentally oriented researchers are interested in investigating the universal aspects of the relation between developmental outcomes and specific parenting practices. To conduct this work, quantitative investigation must rely on the use of instruments known to be comparable across populations. There is a serious gap in the understanding of the equivalence of parenting measures among subgroups, however (Holden & Edwards, 1989; McGuire & Earls, 1993).

There are several reasons researchers and practitioners working with populations in the United States are interested in the impact of cultural differences on family processes such as parenting behavior and parent-child interactions. First, aspects of parenting are thought to have direct impact on children's growth and development (Barnard, Bee, & Hammond, 1984; Bradley, Mundfrom, Whiteside, Casey, & Barrett, 1989). Second, for intervention programs to effectively support families, it is imperative that programs be structured to consider the influence of the families' culture on parenting behavior and interactions with children. Finally, the growing ethnic and racial diversity in the United States means that programs directed toward improving family processes will increasingly encounter families of diverse cultural backgrounds.

Minority mothers in U.S. populations frequently score lower than White mothers on measures of parenting behavior, which has led some re-
searchers to question the comparability of these measures across cultural groups (e.g. Berlin, Brooks-Gunn, Spiker, & Zaslow; 1995; Bradley et al., 1994; Sugland et al., 1995). In their examination of maternal behavior, Berlin and her colleagues questioned the differences found between African American and Anglo American families in the prediction of child language and behavior from constructs. For example, maternal supportive presence was predictive of children's receptive language abilities for African American children but not for Anglo American children. Because the comparability of the meaning of the observational coding system between African American and Anglo American samples is not known, Berlin and her colleagues concluded that it was "possible that the measures of parenting ... are not equivalent across the two racial groups" (p. 681). Sugland et al., in their investigation of the comparability of a measure of parenting behavior, found that "dimensions of parenting are not equally important in explaining child outcomes for different racial/ethnic subgroups" (p. 632). Although concerns about the comparability of the measurement of parenting behavior prompted their investigation, the techniques they used are not thought to provide sufficient evidence of comparability (Meredith, 1993). Again, the possibility that the measures of parenting across the racial groups were not equivalent cannot be ruled out.

Others suggest that differences in parent-child interactions and the relationship with child development between African American and Anglo American families are real, not an artifact of measurement, and an indication of the cultural differences between African American and Anglo American families. Results from international anthropological and quantitative studies indicate that parenting style, parenting practices, and beliefs about the parenting role are influenced by the culture in which the family lives. The widest differences are seen between cultures dominated by Western values such as individualism (Bradley, Corwyn, & Whiteside-Mansell, 1996; Super & Harkness, 1986) and more collectivist societies such as are found in Latin American and China (Berry, Poortinga, Segall, & Dansen, 1992; Triandis, 1989). For American families, however, it is not clear how much the family's cultural identity is overshadowed by the shared experience of living in the United States.

Miller and Miller (1990) have argued that the interactions in African American families between parent and child may differ from Anglo American families in part because these parents felt a responsibility to teach survival skills and coping skills to deal with race-related stressors. Coll, Meyer, and Brillon, (1995) pointed out the importance of kinship networks and the need for racial socialization in the parenting of African American children. They argued that ethnic and minority families in the United States have unique beliefs, attitudes, values, and parenting behaviors. Darling and Steinberg (1993), in their examination of parenting style, noted that when researchers expand beyond White, middle-class families, the processes through which parenting influences children's development is less well understood. Their study indicates that whereas authoritarian parenting is associated with assertiveness among African American girls, differences are also seen between authoritarian parenting style and academic achievements. Repeatedly, authoritative parenting has been associated with positive academic outcomes for Anglo American adolescents; the relationship is less clear for African American youth (Steinberg, Mounts, Lamborn, & Dornbusch, 1991).

Unless instrument comparability has been established, what appears to be group differences could also be a result of assessment tools that do not capture the same construct across cultural, racial, or ethnic groups. In the past, researchers commonly used the same instrument on two or more groups then drew inferences about differences or similarities among those groups. Before inferences can be drawn concerning differences across groups, researchers need to provide evidence of invariance or comparability of the instrument (Horn & McArdle, 1992; Hughes, Seidman, & Williams, 1993). Otherwise, observed differences in means or variances may reflect the fact that the instrument is measuring different constructs in the various groups rather than indicating that the groups vary on the constructs.

There are multiple ways to provide evidence of comparability of constructs (Hughes et al., 1993). It is generally agreed that the degree of comparability found in an instrument is best viewed as a continuum (Bollen, 1989). One strong test of measurement invariance is factorial invariance (Horn & McArdle, 1992). Factorial invariance examines the factor structure of the instrument for between-group differences. Appropriate tests of comparability must include an examination of the manifest means along with an exami-
nination of the factor loadings, however (Meredith, 1993). Multiple-group mean and covariance structures analysis (MACS), an extension of confirmatory factor analysis and structural equation modeling, uses both mean-level and variance-covariance information. MACS analysis is based on the theoretical and substantive knowledge that was used in the development of the items intended to measure the construct (Bollen, 1989; Crowley & Fan, 1997). Other important features of MACS analysis include simultaneous model fitting; allowance for measurement errors; statistical tests of the fit of the data to the hypothesized model; significance tests of the equivalence of manifest means and factor loadings; and significance tests of latent means, standard deviations, and correlation coefficient equivalence across groups.

In this study, behavior ratings of African American and Anglo American mothers and their children who participated in the Infant Health and Development Program (IHDP) were examined for comparability across racial and treatment groups using MACS analyses. Maternal quality of assistance and supportive presence of the child were the maternal behaviors examined during two problem-solving tasks. The data were first examined to assure the fit of a general theoretical model across all groups. Because the coding protocol called for coding of maternal, child, and dyadic behaviors, it was expected that the general model would include these three factors. The focus of the primary research questions was on the comparability of the items composing the maternal behavior factor, although the dyadic and child behavior comparability was also examined. After the comparability of the ratings was examined, the intercorrelation, means, and standard deviation of the maternal, dyadic, and child behavior latent factors were used to investigate cultural differences and similarities.

**METHOD**

**Participants**

The sample and the design for IHDP have been described in previous publications (Gross, Brooks-Gunn, & Spiker, 1992; Gross, Spiker, & Haynes, 1997; Infant Health and Development Program, 1990; Kraemer & Fendt, 1990; Ramey et al., 1992). Briefly, the IHDP was a randomized clinical trial designed to determine the efficacy of a comprehensive early intervention program for preterm, low-birth-weight infants and their families. The program recruited 985 low-birth-weight (< 2,500 g), premature (< 37 weeks gestational age) infants for the study between January and October 1985 at eight data collection sites: Little Rock, AR; New York, NY; Boston, MA; Miami, FL; Philadelphia, PA; Dallas, TX; Seattle, WA; and New Haven, CT. Two thirds of the infants were born < 2,000 g; the remaining one third weighed from 2,001 to 2,500 g at birth. The research design entailed stratification by site and weight group. Within each of the two weight groups at each site, children were randomly assigned by the National Study Office to intervention and follow-up control groups (at a ratio of 1 to the intervention group for each 2 follow-up participants) using a computer-based procedure (Kraemer & Fendt). To reduce the probability of initial bias in the assignment to groups, the National Study Office monitored five additional variables: gender, maternal education, race, primary language spoken in the home, and infant participation in any other research study.

The intervention consisted of monthly parent meetings, home visits with families during the child’s first 3 years of life, and high-quality child care during the 2nd and 3rd years of life. Because the intervention was expected to impact behavioral characteristics of the mother and the child, treatment group status was considered in all analyses.

Of the 985 families in the IHDP study, videotapes of mother-child interaction and complete coding were obtained for 447 mothers and children. Because there were so few Hispanic families (n = 36) and other ethnic and racial groups (n = 8) with data on the video protocol, only Anglo American (55 treatment and 88 comparison) families and African American (115 treatment and 189 comparison) families were included in this study. Additional information concerning missing data was reported by Spiker, Ferguson, and Brooks-Gunn (1997).

**Videotaping Procedure and Coding**

The paradigm used in the IHDP consisted of a standardized setting and problem-solving tasks coded from videotape (Crawley & Spiker, 1983; Matas, Arend, & Sroufe, 1978; Spiker et al., 1993). The structured observation involved prescribed situations that present the child with a reasonable amount of stress and difficulty. The protocol allowed coders to observe the child’s ability to draw on available resources (such as parent’s
input) and coordinate their own personal resources (Matas et al.). The assessment elicited parenting behavior that would frequently not occur in naturalistic settings and was intended to assess specific types of behaviors. In addition, these assessments captured not only specific parent behaviors but also child and caregiver interactional behaviors.

When participating children were 30 months of age, mother and child were videotaped in 8 minutes of free-play, followed by a clean-up task, and finally by three different problem-solving tasks (each lasting up to 6 minutes). The first problem task was designed to be easy and considered a warm-up. Coding for the nine observed variables used in this study (four mother behavior variables, three child behavior variables, two dyadic variables) were obtained from the remaining two problem-solving tasks (box rake task and lure block task). These tasks required the child to retrieve a toy in a Plexiglas container and generally were difficult enough that the mother was required to assist. The coding system was adapted for this study by Spiker et al. (1993) from similar procedures developed by Sroufe, Matas, and Rosenberg (1980), Crawley and Spiker (1983), and Matas and colleagues (1978).

All coders were Anglo American. Coder reliability was assessed with kappa coefficients and was within acceptable levels (.66 to .93). Further details of the IHDP videotaping protocol, reliability, and coding procedures can be found in Spiker et al. (1993, 1997).

**Measures**

**Maternal behavior.** Maternal ratings of supportive presence (7-point scale) and quality of assistance (7-point scale) were obtained from two problem-solving tasks resulting in two ratings of each variable. For both supportive presence and quality of assistance, higher scores indicated more positive behaviors. Maternal supportive presence was intended to assess the degree to which the mother provided emotional support and a secure base for the child. Maternal quality of assistance included the clarity, timing, pacing, and developmental appropriateness of instruction offered to the child by the mother. A high score indicated that the mother provided minimal (nonintrusive) but necessary, assistance to the child.

**Dyadic interaction ratings.** Two measures of dyadic behavior were coded from the two problem-solving tasks, with high scores indicating more positive behavior: positive problem solving (5-point scale) and mutuality (5-point scale). Positive problem solving was an assessment of the overall quality of the problem solving situation for affecting the child’s sense of self as a competent, active, and enthusiastic problem solver. Mutuality refers to the quantity and quality of behavioral synchrony between mother and child, that is, the degree to which behavioral exchanges are reciprocal, responsive, and contingent.

**Child social behavior.** Three measures of child behavior were coded from the two problem-solving tasks with high scores indicating more positive behavior: persistence (5-point scale), enthusiasm (7-point scale), and overall child behavior (5-point scale). Persistence assessed the degree to which the child was goal-directed and engaged with the task child. Enthusiasm assessed the quality of interest and enjoyment the child displayed. Overall child behavior included the child’s enthusiasm and positive involvement with the task including the degrees of persistence, flexibility, cooperation with the mother, and enjoyment of the task child (Matas et al., 1978; Spiker et al., 1993).

**Data analysis**

In this study, the hypothesized model shown in Figure 1 of three latent constructs and nine manifest variables was examined. Maternal supportive presence and quality of assistance were measured twice, once for each of the two tasks. Three indicators of child behavior were modeled (persistence, enthusiasm, and overall child behavior). Two indicators of the mother-child dyad were modeled (positive problem solving and mutuality).

First, the four groups (two racial and two treatment) were examined separately. Then the comparability of the measures was examined by fitting the model simultaneously to the four groups using MACS analysis. Finally, after the issue of comparability was determined, the cultural similarities of the latent constructs’ means, variances, and correlations were estimated in the multigroup analyses.

In all analyses, the error variances for observed variables were estimated. Because the same raters coded both mother behaviors during an activity, the estimation of error covariances between mother behaviors for a specific task was justified. (i.e., supportive presence and quality of assistance from the box rake task) In addition, behavior was coded for estimation of error covariance across tasks was warranted.

The computer programs, LISREL-8.14, developed by Jöreskog and Sörbom (1996a, 1996b), were used for parameter estimation using maximum likelihood estimation. PRELIS 2, a preprocess program used to examine the distribution of the observed data and covariance matrices and observed input into LISREL-8 (Jöreskog and Sörbom 1996b). Additional details of analyses can be found in Little and Conaway (1987). There are a variety of ways to assess model fit and little consensus exists regarding an index; however, there is...
Cross-Racial Comparability of Mother-Child Interaction

![Diagram of Latent and Observed Factor Structure of Maternal, Child, and Dyadic Behavior]

Three measures of child behavior (the two problem-solving indicators and a single measure of overall problem solving) were modeled (perspective-taking, child behavior). The model for each child was analyzed using maximum likelihood (ML) estimation. PRELIS 2, a program for multigroup analyses, was used to examine the distributions of observed data and compute variances—covariance matrices and observed mean information for input into LISREL 8 (Joreskog and Sorbom, 1996b). Additional details describing MACS analyses can be found in Little (1997) and Joreskog and Sorbom (1996b).

There are a variety of indices used to assess model fit and little consensus concerning the best index; however, there is agreement that multiple indicators of fit should be examined and the emphasis on one fit index over another depends on the context of the test (Hu & Bentler, 1995). Commonly reported statistics of global model fit include the nonnormed fit index (NNFI; Tucker & Lewis, 1973), chi-square statistic, the root mean squared error of approximation (RMSEA; Steiger, 1990), and the comparative fit index (CFI; Bentler, 1990). The NNFI and the CFI usually range in value from 0 to 1 with values above .95 indicating a good fit (Hu & Bentler, 1999). The NNFI is used as an evaluation of a model relative to a base model and to compare competing models. That is, when the change in the NNFI is small between two models (difference < .05), the more parsimonious model is accepted (Little, 1997; Tucker & Lewis). The CFI is thought to provide a more precise assessment than the NNFI when samples sizes are small (Hu & Bentler, 1995). The chi-square statistic...
used as a test statistic, a goodness-of-fit measure, and to compare models by examining the $\chi^2$ difference between models (Bentler & Mooijaart, 1989). The RMSEA is recommended except when sample sizes are very small with values less than .08 have been suggested as reasonable fits (Browne & Cudeck, 1993; Fan, Thompson, & Wang, 1999; Hu & Bentler, 1999). In addition to global fit, local fit of individual parameters can be examined using $t$ values and modification indices.

In the examination of the comparability of the instruments across groups, goodness-of-fit measures will be examined to determine if the model is a reasonable approximation of the data. An emphasis will be placed on the global model fit using the NNFI > .95, goodness-of-fit $\chi^2$ around 2, and CFI > .95; and local fit indices $t$ values ($> 2$) and modification indices small and similar in magnitude. In the examination of the cultural similarities of the latent constructs’ means, variances, and correlations, the fit of the alternative models will be primarily assessed by examining the change in the NNFI (<.05) and the $\chi^2$ difference test (nonsignificant).

**RESULTS**

Analysis of the distribution of item-level data showed no serious problems with skewness (all variables with values <.8) or kurtosis (all variables with values < 1.1), indicating that the use of ML estimation was appropriate (Muthen & Kaplan, 1985). Comparisons of the intake demographic data ($t$ tests and $\chi^2$ statistics) indicated significant differences between the IHDP study families excluded from this study (because of incomplete data or missed assessment) and those included in this study. Mothers with missing data on the video protocol were slightly older (25.1 compared with 24.1 years of age, $t = -2.5$ $p < .05$), more educated (38% with more than high school degree compared with 28%, $\chi^2 (4) = 13.7$, $p < .01$), and more often Anglo American (46% compared with 32%, $\chi^2 (1) = 18.9$, $p < .01$). No differences were found in child birth weight, gestational age, gender, or treatment group.

Table 1 displays demographic characteristics of participating families by racial and treatment group in this study. Of the families included in this study, the Anglo American mothers were older ($F = 17.18$, $p < .01$), more educated ($\chi^2 (12) = 73.93$, $p < .01$), and more often married ($\chi^2 (9) = 123.8$, $p < .01$) than the African American mothers.

As shown in Table 2, global goodness-of-fit measures indicated a good fit of the model in all four groups. Local fit measures also indicated a good fit and supported the equality constraints within groups. All $t$ values were greater than 2, indicating path coefficients were nonzero. Modification indices were generally small and consistent indicating that no additional path would improve the model significantly.

The comparability of the structure across groups was tested with a multisample MACS modeled with no cross-group constraints. As seen in the first line of Table 3, the global goodness-of-fit indices were within acceptable ranges (NNFI, CFI > .95, $\chi^2$ goodness of fit = 1.2, $t$ values < 2, and modification indices similar). Local indicators of fit were similar to those found in the separate analyses. Next, the invariance of the factor loadings was examined. A good fit was found in this analysis where path coefficients be-
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### Table 2. Fit Indices for Each Subgroup

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>N</th>
<th>NNFI</th>
<th>RMSEA</th>
<th>CFI</th>
<th>(\chi^2)</th>
<th>df</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American/comparison</td>
<td>189</td>
<td>.9853</td>
<td>.06</td>
<td>.992</td>
<td>31.58</td>
<td>20</td>
<td>&lt;.048</td>
</tr>
<tr>
<td>African American/</td>
<td>55</td>
<td>1.00</td>
<td>.00</td>
<td>1.00</td>
<td>11.54</td>
<td>20</td>
<td>&lt;.931</td>
</tr>
<tr>
<td>Anglo-American/</td>
<td>88</td>
<td>.988</td>
<td>.05</td>
<td>.993</td>
<td>24.45</td>
<td>20</td>
<td>&lt;.223</td>
</tr>
<tr>
<td>treatment</td>
<td>115</td>
<td>.965</td>
<td>.07</td>
<td>.981</td>
<td>22.91</td>
<td>20</td>
<td>&lt;.027</td>
</tr>
</tbody>
</table>

Note: CFI = comparative fit index; NNFI = nonnormed fit index; RMSEA = root mean squared error of approximation.

Mothers with missing data were slightly older (25.1 years of age, \(t = -2.5\)) and more educated (\(\chi^2 (12) = 18.9, p < .01\)). No child birth weight, gestation group.

Tres汽racic racial and treatment the families included in African American mothers were older, more educated (\(\chi^2 (12) = 18.9, p < .01\)), more often married (\(\chi^2 (12) = 18.9, p < .01\)), and the African American global goodness-of-fit of the model in all measures also indicated a.

The equality constraints across the four groups, the fit was significantly worse when compared with the last test of invariance. For example, the \(\chi^2\) statistic showed a significant increase of 47.39 from 171.84 to 219.23 (\(\chi^2\) critical = 16.92, \(df = 9\)). An examination of the modification indices suggests that the model fit might be improved if the mean for mother behavior is freed, in particular, the mean for Anglo American Treatment families. In an exploratory analysis, the means for mother’s behavior were allowed to vary among the groups, whereas the means for the other two latent variables were constrained. This resulted in an improved fit (NNFI = .972, \(\Delta\) NNFI = .006, RMSEA = .07, CFI = .98, \(\chi^2 = 196.80, df = 122, p < .001, \Delta\chi^2 = 24.96\)). This result suggests that for mother’s behavior, there are differences across groups in the mean score. An effect size index was computed to compare means for African American and Anglo American mother behavior within treatment groups. For comparison families, Anglo American mothers scored .71 standard units above African American mothers. Anglo American treatment mothers scored 1.04 standard units above African American mothers. When treatment effects were examined, treatment Anglo American mothers scored .17 standard units above African American comparison mothers, and treatment Anglo American mothers scored .45 standard units above Anglo American mothers.

As shown in Table 3, when latent standard deviations were constrained across the four groups, the fit was acceptable. A similar result was found when the latent correlation coefficients were examined. The change in NNFI and \(\chi^2\) were small, suggesting that little was lost in the quality of fit when additional constraints were imposed on the model. These results indicated that there was no difference across ethnic or treatment groups in the variance of the means or the interrelationship of mother’s behavior, child’s behavior, and mother-child dyad behavior. That is, the correlation coefficients among the behavior variables are similar across groups.

Finally, supplemental analyses were conducted to address differences in socioeconomic status (SES) among the groups. Treatment and racial invariance and cross-group comparisons were made using covariance matrices with SES partialed out (using mother’s education level as a proxy for SES). The set of analyses above were repeated, resulting in the same conclusions of invariance and mean differences in mother behavior.

**DISCUSSION**

This study examined the comparability of an assessment of mother and child behavior using a structured direct observation coded from videotaped problem-solving tasks. Participants in this
Table 3. Fit Indices for Tests of Comparability and Cross-Cultural Equivalence for the Four-Group Model.

<table>
<thead>
<tr>
<th>Description of Test</th>
<th>NFI</th>
<th>Δ NFI</th>
<th>RMSEA</th>
<th>CFI</th>
<th>χ²</th>
<th>df</th>
<th>p value</th>
<th>Δχ²</th>
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</thead>
<tbody>
<tr>
<td>Comparability tests</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>.987</td>
<td>—</td>
<td>.05</td>
<td>.993</td>
<td>101.5</td>
<td>80</td>
<td>&lt;.053</td>
<td>—</td>
</tr>
<tr>
<td>Factor loadings</td>
<td>.982</td>
<td>.005</td>
<td>.06</td>
<td>.988</td>
<td>138.9</td>
<td>98</td>
<td>&lt;.004</td>
<td>37.4</td>
</tr>
<tr>
<td>Factor loadings</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and intercepts</td>
<td>.977</td>
<td>.005</td>
<td>.07</td>
<td>.982</td>
<td>171.8</td>
<td>116</td>
<td>&lt;.001</td>
<td>32.9</td>
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<tr>
<td>Cross-cultural tests</td>
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<tr>
<td>Latent m</td>
<td>.964</td>
<td>.013</td>
<td>.08</td>
<td>.969</td>
<td>219.2</td>
<td>125</td>
<td>&lt;.001</td>
<td>47.4</td>
</tr>
<tr>
<td>Latent SD</td>
<td>.979</td>
<td>.002</td>
<td>.06</td>
<td>.982</td>
<td>181.1</td>
<td>125</td>
<td>&lt;.001</td>
<td>9.3</td>
</tr>
<tr>
<td>Latent correlations</td>
<td>.978</td>
<td>.001</td>
<td>.06</td>
<td>.981</td>
<td>183.6</td>
<td>125</td>
<td>&lt;.001</td>
<td>11.8</td>
</tr>
</tbody>
</table>

Note: CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean squared error of approximation.

The question of the impact of treatment, although not the central question in this study, is addressed by the analyses. The finding is, to have had a significant impact of the latent variable representing the quality of emotional support, was not anticipated in the previous analyses of the study by Berlin and colleagues. Using HIA data, they had expected an improvement in the emotional support for the African American families, and the results are helpful in that they provide evidence for the improvement of emotional support for the five groups. These findings are consistent with the emotional support, and also with the quality of emotional support for the African American families, and the findings are consistent with the quality of emotional support for the five groups.

Study of low-birthweight premature infants in the HIPP study, using BDI, of the four-group model, and the findings are consistent with the quality of emotional support for the five groups.

Table 4. Comparisons Across Groups for Treatment and Child Behavior.

<table>
<thead>
<tr>
<th>Group</th>
<th>Child Behavior</th>
<th>Mother-child Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American spouses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother-child</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td></td>
<td></td>
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<tr>
<td>Child</td>
<td></td>
<td></td>
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<tr>
<td>White</td>
<td></td>
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<tr>
<td>Mother-child</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td></td>
<td></td>
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<tr>
<td>Child</td>
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</table>

Note: Group comparisons indicated by asterisks.
1-0d children and their moth-

er. IHDP study of low-birth-
tants. Strict tests of factorial

that the constructs of mother,
avior assessed were invariant
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ardless of treatment group.
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parisons across groups are
. In general, coding of ob-
ften used in large interven-
ss across racial subgroups.
ince in this study are partic-
ren that the groups were not
ly but also different in socio-
ed. The Anglo American
ad a higher educational lev-
ppor (more often married)
erican mothers. This suggests
ay be invariant across socio-
well as racial groups. Unfor-
jects in each group were
rt test of treatment, socio-
differences. Nonetheless, in
where SES status was con-
clusions of invariance

<table>
<thead>
<tr>
<th>TABLE 4. COMPARISON ACROSS GROUPS OF LATENT MEANS, STANDARD DEVIATIONS, AND CORRELATIONS</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>S Differentiation</td>
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<tr>
<td>Mother-child interaction</td>
</tr>
<tr>
<td>Child behavior</td>
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<tr>
<td>SD Differentiation</td>
</tr>
<tr>
<td>Mother-child interaction</td>
</tr>
<tr>
<td>Child behavior</td>
</tr>
<tr>
<td>Correlations</td>
</tr>
<tr>
<td>Mother with mother-child</td>
</tr>
<tr>
<td>Mother with child</td>
</tr>
</tbody>
</table>

*American comparison means and standard deviations were set to 0 and 1 to set the metric for the estimation in other groups.
*Modification indices indicated that the means for mother behavior were not equal across groups.

addressed by the analyses. The treatment appears
to have had significant impact on the mean scores
of the latent variable representing maternal beha-
vior. That is, for racial groups, treatment mothers’
support and assistance was more positive than
comparison mothers. There is no indication that
the treatment altered the basic relation between
the quality of emotional support the mother pro-
vides and the quality of instructional assistance
she provides, however. Such treatment effects
were not anticipated in that IHDP attempted to
improve the quality of parenting, both the emo-
tional and instructional quality, but in no way at-
ttempted to change how each affected the other.

These results are helpful in clarifying future
and previous analyses. It allows a reexamination
of the study by Berlin and her colleagues (1995).
Using IHDP data, they found differences in the
contribution of maternal supportive presence and
quality of support in the prediction of child lan-
guage and behavior for African American and
Anglo American families. Our study results allow for
a stronger statement concerning the possibility
that parenting behavior “may be differentially re-
lated to childhood functioning for White children
than for Black children” (Berlin et al., p. 681).
These results do not support Berlin’s suggestion
that one explanation for the differing relationship
between mother and child variables was that the
assessment may not be comparable across groups.
That is, the same construct of parenting behavior
(a dimension of supportive presence and quality
of assistance) was assessed by the protocol in the
two ethnic groups (and across treatment groups).

Based on their findings that African American
mothers consistently reported more problem be-
haviors (Child Behavior Checklist 2–3; Achen-
bach, Edelbrock, & Howell, 1987) and less lan-
guage abilities (Peabody Picture Vocabulary Test–
Revised; Dunn & Dunn, 1981) for their children
than Anglo American mothers, Berlin and her col-
leagues (1995) suggested that these measures are
not equivalent across African and Anglo American
groups. This could also indicate the result of
an interactive process, however. As suggested by
Berlin et al., children with lower language abilities
or more problem behaviors may elicit maternal
interactions of less quality. It may also be a
reflection of the less optimal environments (more
poverty, less educated mothers) that the majority of
the African American families in this study ex-
perienced.

It is important to point out that this study can-
not discount the possibility that African American
mothers provide support in ways that were not
assessed by this measure. Nonetheless, similar
findings have been reported for the broader con-
structs assessed with the HOME Inventory (Brad-
ley et al., 1994; Sugland et al., 1995). That is, in
both an assessment of broadly defined parenting
behaviors (HOME) and more narrowly defined
parenting behaviors (structured observation), fac-
tor invariance has been suggested and racial dif-
fences in the relationship of parenting behaviors
and child development were observed. Finally,
there is evidence that African American children
receive parenting, such as support, from other
sources (Jayakody, Chatters, & Taylor, 1993). It is
possible that the family structure in African American families provides the opportunity for maternal-like interaction from sources other than the mother.

Another limitation to our study is that all of the coders were Anglo American. Gonzales, Cauce, and Mason (1996) reported that African American coders rated African American mothers as less controlling of their adolescent children than non–African American coders using observational scales. Nonetheless, there were no differences in their study of the ratings of maternal support across coders. MACS used in our study would have detected bias by coders if the bias were in one observed indicator of a factor but not in all. For example, bias would not have been detected if coders had uniformly coded all indicators of maternal behavior higher or lower for one group compared with the other; however, bias would have been detected if coders had coded a specific behavior (supportive presence, for example) consistently lower for one group. Littell (2000) discussed the issue of detecting cross-cultural bias using MACS analyses in detail.

It should be noted that this study and key studies cited in the interpretation of findings were conducted on the Infant Health and Development Program study (Berlin et al., 1995; Bradley et al., 1994; Sugland et al., 1995). This is both a strength and weakness. It is helpful to examine similar questions with different methods and approaches in the same study to discount differences due to sampling across studies. Because the IHDP study was a study of preterm, low-birth-weight children and their families, generalizations to other populations may not be warranted, however.

Finally, findings from this study should not be interpreted as support for the proposition that parenting practices among African American families have the same input on children’s development as do similar practices in Anglo American families. For example, Darling and Steinberg (1993) in their examination of parenting style, pointed out that when researchers expand beyond White, middle-class families, the processes through which parental influences the child’s development is less understood. Findings from this study provide only a limited test of the cultural equivalence of parenting behavior. At a broad level, there seems to be at least some generality in the meaning and organization of parenting and child behavior. Nonetheless, as Hui & Triandis (1985) argued in regard to cross-cultural equivalence, one can examine finer details of parenting, one may find somewhat less generality across groups. Thus, it is important for future research to examine even finer gradations of parenting and child behavior to determine whether cultural dissimilarities may emerge at these levels.

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REFERENCES
Cross-Racial Comparability of Mother-Child Interaction


We used data from the National Longitudinal Study of Youth to examine the role of family structure on behavioral and cognitive outcomes. In the 1980s, there was a significant increase in the number of single-parent families. Despite this change, the number of children living with a single parent has remained relatively stable. However, the amount of time that children spend with a single parent has increased, and this has had a significant impact on their behavior and cognitive development.

Changes in marriage and divorce patterns have led to a significant increase in the number of families headed by a single parent. In the 1980s, the number of single-parent families increased, but the number of children living with a single parent has remained relatively stable. However, the amount of time that children spend with a single parent has increased, and this has had a significant impact on their behavior and cognitive development.

We used data from the National Longitudinal Study of Youth to examine the role of family structure on behavioral and cognitive outcomes. In the 1980s, there was a significant increase in the number of single-parent families. Despite this change, the number of children living with a single parent has remained relatively stable. However, the amount of time that children spend with a single parent has increased, and this has had a significant impact on their behavior and cognitive development.