The Relationship between Child Gender and Quality of Child Care Experiences at 24 Months

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Abstract

This inquiry examined the processes underlying gender differences in child care quality. Boys in were found to be in lower quality care, and structured observations revealed that they were less socially integrated with adults and peers than girls. Results suggest males experience lower quality care at both the individual and group level.

Introduction

Factors Influencing Quality

Sixty percent of children under the age of six are enrolled in some form of non-parental care (Mulligan, Brimhall, West, & Chapman, 2005) which makes child care a critical environment for child development. Research on the variables commonly used by parents when selecting child care programs has reported location, cost and hours to have more influence on parents’ child care choices rather than the quality of care (Johansen et al., 1996). However, findings have consistently shown the quality of child care can be an important factor in a child’s development (Bates et al., 1994; C. Howes, 1988, 1990; Carollee Howes, 2000; NICHD Early Child Care Research Network, 1998a, 2001, 2003; Phillips et al., 1987). In the past child care was seen over simplistically as non-maternal care that had uniform effect on children. More recently, as the result of more research, child care is being recognized as a complex environment composed of many potential buffering and risk factors for children. Even more complex is the interaction which the child care environment may have with child outcomes. For example, child care attributes may also impact children differently based on child characteristics.
Evidence from several sources indicates that child care and quality of child care environments to be predictors of social behavior outcomes in early development (C. Howes, 1990; NICHD Early Child Care Research Network, 1998a, 2001; Phillips et al., 1987). For example, while the National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network study (1998b) found mothering to be a stronger predictor of child outcomes than child care, the study also found a trend for child care quality to be the most consistent predictor of child outcomes, defined as child compliance, self-control and problem behavior, out of the child care variables examined such as quantity.

**Gender and Quality**

The question to ask in future child care research is for which children is children care a risk factor, neutral, or even beneficial? Gender is one potential individual difference which may influence the type and quality of the child care environment. Several studies have found girls to be in higher-quality care than boys (C. Howes, 1990; NICHD Early Child Care Research Network, 1997; Wachs et al., 2004). Additionally, Howe and Olenick (1986) suggested that the quality of nonparental care has a greater impact on boys than girls.

Child care quality has been consistently associated with cognitive and language development (Burchinal, Roberts, Nabors, & Bryant, 1996), including reading comprehension (NICHD Early Child Care Research Network, 1998), and prosocial behavior (Burchinal et al., 1996). The NICHD study (2001) conducted on child care and peer interaction found that caregiver sensitivity and responsiveness were most
consistently associated with positive peer interactions in child care despite the quantity of time children spent in child care. Given the impact of child care on developmental outcomes, discovering which structural characteristics influence the quality of care for individual children should be an important public policy agenda. Child gender is an individual difference which could impact a child’s experiences and environment but even more so when discussing child care. Child care is a profession disproportionately chosen by females but both boys and girls are being placed by parents in some form of child care. Having both boys and girls being cared for by female providers sets up potential for differences in the quality of child care received by female and male children. Given that male children are disproportionately receiving child care from providers of the opposite sex. Providers’ perceptions, views, and treatment of male children are likely to differ from female children.

The time at which most children are entering child care is also the period which children increase socialization with peers and begin to favor same-sex peer interactions (Fabes et al., 2003). Peer interactions have been shown to have an impact on children’s development with same-sex peer interactions having a greater influence than other-sex and mixed-sex peer interaction (Martin & Fabes, 2001). Thus, the gender composition of a child care classroom could have differential outcomes for children. Furthermore, given the importance of same sex peers and differences in boy and girl play, the providers’ reaction to the different types of play has potential importance.

The impact of individual child characteristics on child care experiences is an emerging area of research. Child gender is an individual difference that could affect a child’s experiences in child care. Only a handful of studies have examined gender as a
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central predictor of child care quality. Those that have reported differences in child care experiences based on gender have uniformly found that girls experience higher quality care (e.g., Howes, 1990; NICHD, 1997; Wachs, Gurkas, & Kontos, 2004). Only one of these studies (Goulet, Kryzer, & Gunnar, 2005), has attempted to identify the processes underlying these gender differences. They found that a higher percentage of female children in home-based settings are associated with an increase in social integration and expressed community.

The current study expands upon previous research to analyze processes that may underlie gender differences in observed child care quality at both the individual and group level. This study first explores whether these previously reported gender differences are replicated and then expands upon previous research to analyze processes that may underlie gender differences in observed child care quality at both the individual and group level. In addition, two hypotheses were developed to examine the mechanisms underlying males low quality child care experiences. The first hypothesis examines the gender ratios within the observed target children’s classrooms. Potentially, classrooms which are composed of unequal gender ratios may create different child care environment experiences and there may be a male group effect contributing to lower quality of care. The second hypothesis is that provider’s gender perceptions may be related to differences between the child care experiences of males and females.

**Method and Materials**

**Participants**
The analyses presented in this paper are just one component of a large, ongoing study which followed 290 participants from 4 months to 2 years of age in order to research the trajectory of temperament in early child development. Of the 290 children recruited for the temperament study, child care history data was collected on 284 children (114 females and 140 males) at 9, 16, and 24 months. Child care histories were collected via phone interviews with the children’s parents about the type of care, number of hours per week, the number of peers, and the start and end dates for each arrangement. Of these 284 children, 65% were Caucasian, 13% were African American, 4% were Latino/Hispanic, 2% were Asian American, 14% were multi-racial, and 1% were classified as other.

Beginning at 24 months, children enrolled in regular non-parental child care, defined as 10 hours per week for a month or more, were recruited to participate in the second portion of the study which aimed to observe children in their regular child care arrangements at 2, 3, and 4 years of age. Of the 158 children in regular child care, eight had moved out of the area and were not available to be observed. From the 150 available children in regular care, 69 (46%, 31 female, 38 male) were observed at 24 months. For the other 81 unobserved children, either the parents refused, the provider refused, or the parents or provider could not be reached via telephone during the age window for data collection in order to schedule an observation.

**Apparatus/ measures**

**Child Care History**
Beginning at 9 months, and again at 16 and 24 months, telephone interviews were conducted to mothers in order to obtain updated information of their child’s history and characteristics of child care arrangements. Interviews asked the mothers about the child’s age of first entry into child care and the type, start and end dates, hours attended per week, and the number of other children, for each regular arrangement the child attended. Regular care was classified as either primary or secondary. Interviewers were instructed to categorize primary type of care as the arrangement used for the most hours per week but a minimum of 10 hours per week. Arrangements used for less than 10 hours per week but at least 6 hours were classified as secondary care. Child care arrangements were categorized into four groups: Relative care (care with a relative in the child’s or relative’s home), family-based child care (care by a family child care provider in the provider’s home), nanny or babysitter (care with a non-relative in the child’s own home), and center-based child care (care in a child care center or preschool).

Child Care Quality: Environmental rating scales

The total score from the Family Day Care Rating Scale (FDCRS; Harms & Clifford, 1989) was used for observations in home-based child care settings as a measure of overall environmental quality. The FDCRS contains 40 items which are divided into seven subscales: Space and furnishings, basic care routines, language and reasoning, learning activities, social development, adult needs, and provisions for exceptional children. For the purposes of the current study, items in the adult needs and provisions for exceptional children subscales were not scored by observers. Trained observers had to agree on 85% of the items within one point on the seven-point scale with a master
coder on 3 separate observations before observing independently for data collection. During data collection, inter-rater agreement was 94% for the total FDCRS score and ranged from 86 to 97% for the subscales selected for the study. With Cronbach’s $\alpha = .84$, the total FDCRS scores used for this study were reliable.

The total score from the Infant/Toddler Environmental Rating Scale-Revised (ITERS-R; Harms, Clifford & Cryer, 2002) was used for observations in center-based settings. The ITERS-R contains 39 items organized into seven subscales: Space and furnishings, personal care routines, listening and talking, activities, interaction, program structure, and parents and staff. For the purposes of the current study, observers did not score items in the parent and staff subscales. Additionally, the item rating TV and video use was excluded from analyses due to the lack of TV viewing in centers observed in the study. Agreement procedures before data collection using the ITERS-R were the same as the FDCRS. Actual inter-rater agreement was 95% for the total ITERS-R score and ranged from 91 to 96% on the selected subscales during data collection. With Cronbach’s $\alpha = .88$, the total ITERS-R score was also reliable.

*Child Care Quality: Social processes of quality experienced by the target child:*

The frequencies of behaviors involved in social processes of quality and qualitative ratings of the quality of the setting were measured using the modified version of the Observational Ratings of the Caregiving Environment (M-ORCE, Phillips & Ahern 2003). The original measure, the Observational Ratings of the Caregiving Environment (ORCE; NICHD Early Child Care Research Network, 1996) was used in the NICHD study of Early Child Care. The measure is based upon time-sampling to record the
frequencies of specific behaviors involved in the quality of caregiver-child and peer interactions. The M-ORCE also repeatedly collects counts of the number of caregivers, other adults, and children present during the observation of the setting which were used to calculate group sizes and child: teacher ratios.

The M-ORCE contains four observation cycles which take a total of 44 minutes to complete. Three 10 minute cycles collect behavioral observations of the child’s behavior and interactions with others in the child care environment. In these 10 minute cycles, observers alternate between observing for 30 seconds and recording what was just observed for another 30 seconds using a behavioral checklist. After the first and second cycle, the observer spends 2 minutes recording additional notes to be used for the final qualitative ratings made at the end of the total observation.

The behavioral checklist is comprised of specific categories for the child’s activity context, attention/engagement, positive/neutral social integration with peers and adults, negative interactions with peers, positive (prosocial) interactions with peers, adult language, type of adult stimulation provided, adult physical control, and child compliance. Coders maintained a Cohen’s Kappa of .80 for reliability with a master coder on all behavior scale categories used in the 24 month data.

For the fourth and last cycle, coders observe and make qualitative ratings, which are based on a 4-point scale, of the quality of the child care setting. The qualitative variables are grouped into three sections. The first is caregiver behavior toward the target child which includes sensitivity/responsivity, intrusiveness/overcontrol, detachment/disengagement, positive regard for the child, and negative regard for the child. The second rating section is on child mood which is comprised of ratings on
positive mood, vigilant/anxious mood, sad/unhappy mood, angry/irritable mood, and overall sense of belongingness/integration. The final qualitative category is on the overall environment including chaos, overcontrol, positive emotional climate, negative emotional climate, positive community building, negative community building, expressed community, and the overall impression of the child care setting.

The following composite variables were created from the M-ORCE frequency scores by summing the weighted standardized counts and taking the mean score qualitative ratings on a four-point scale: Stressful Environment, Positive Caregiver Behavior, Negative Caregiver Behavior, Positive Caregiving Rating, and Negative Caregiving Rating. Stressful environment is the sum of standardized variables for group size, child: teacher ratio, overall quality reversed, and chaotic environment, with Cronbach’s α = .75. Positive Caregiver Behavior is the sum of the following standardized positive quantitative scores: speaks positively, positive physical contact/shared affect, mutual exchange, high social integration with adults, with Cronbach’s α = .87. Negative Caregiver Behavior is the sum of following standardized negative quantitative scores: no language, no adult stimulation, unintegrated with adults, speaks negatively, and restrictive actions, with Cronbach’s α = .82. Positive Caregiving Rating is a composite of the following positive qualitative variables: caregiver sensitivity/responsivity, caregiver detachment/disengagement (reversed), positive regard for the child, positive emotional climate, positive community building, and expressed community. Negative Caregiving Rating is a composite of the following negative qualitative variables: caregiver intrusiveness/overcontrol, negative regard for the child,
negative emotional climate, and negative community building. Means reported for composite analyses were calculated from standardized scores.

**Provider Surveys**

Before the observation, providers were sent three surveys in the mail to be filled out by the lead teacher/provider and picked-up by observers on the day of the visit. The first survey is the Caregiver-Teacher Report Form (CTRF). The CTRF is a survey designed to obtain child care provider ratings for children ages one and a half to five years on 99 items. In addition, the measure requests brief descriptions of problems, disabilities, what concerns the provider about the child, as well as the best qualities of the child. The second survey given to providers was the Revised Teacher Toddler Behavior Assessment Questionnaire (TBAQ; Goldsmith, 1996). The TBAQ is designed to examine temperament-related behavior in children 16 to 36 months old using 108 items classified into six-scales: activity level, anger, fear, pleasure, and interest. The final instrument given to providers was the Student-Teacher Relationship Scale (STRS; Pianta, 2001). The STRS is a 28-item scale that uses a 5-point rating scale. Factor analysis suggests that the STRS measures three dimensions of student-teacher relationships: Conflict, Closeness, and Dependency.

**Procedure**

*Screening and Recruitment*

Using commercially available mailing lists of households with young infants, families were recruited to participate in the longitudinal study. Parents were sent letters about the project along with a form to be completed and mailed back to the laboratory if
they were interested. Once the forms were received, the mothers were contacted via telephone. Mothers with healthy infants were scheduled to visit the lab when their infant was 4 months old to determine the child’s temperament.

Child care history calls began to participating parents when their child was 9, 16, and 24 months of age. At 24 months, the child care information was used to determine eligibility and recruit participants for the observational child care component of the study. If the child was in regular care (i.e., at least 10 hours a week for a month or more) at 24 months, the family was recruited to participate in the additional child care observation portion of the study. Permission was obtained first from the parent and, if permission was given by the parent, permission was then obtained from the child care provider. Children who were enrolled in more than one arrangement were visited in the setting which the child spent the most hours per week, and this arrangement was considered the primary arrangement for observation and analysis purposes.

**Child Care Observation**

The child care observation was scheduled for a day which represented a typical day in the child’s child care experience (i.e., no field trips or unusual activities were scheduled on the scheduled day). Two trained observers visited each primary child care arrangement for most of the day in order to obtain independent ratings of the child care environment and the experiences of the target child. One researcher observed the target child, the child-caregiver, and peer interactions using the M-ORCE. The coder completed two 44-minute observation periods in the morning and one 44-minute observation period in the afternoon. The second researcher observed over the course of the day and completed the
environment rating scale appropriate for the setting, either the ITERS for center-based programs, or the FDCRS for home-based, family, or nanny arrangements. The provider and center director, if relevant, received monetary compensation for their participation in the study.

**Results**

Descriptive statistics, indicated that of the children observed in their primary care arrangement at 24-months of age, boys and girls were nearly equally represented in the sample. The number of boys and girls in the observational portion of the study is nearly equal (31 female, 38 male). A multinomial regression using gender as an independent variable and temperament as the dependent variable found no significant gender differences for type of child care. In addition, a cross-tabulation to test whether there were any gender differences in the composition of temperament groups led to no significant results. A cross-tabulation was also conducted to determine if there were differences in whether boys or girls were in child care with unrelated peers and did not yield significant results. A multinomial regression model which examined gender of the target child as an independent variable and the age of entry into child care as the dependent variable was not significant (however, the gender coefficient happened to be significant, $t(69) = -2.09, p < .05$).

**Overall Quality Outcomes**

Preliminary analyses performed before data collection was complete indicated boys in our sample were in lower quality care than girls (Sussman & Phillips, 2005). With the complete data, analyses were run to determine if there were still in fact differences in
quality of care between male and female target children. Initial analyses support gender differences in overall quality.

Separate ANOVAs examining child gender differences on the total ITERS and FDCRS scores were significant, with $F(1, 30)=5.88, p<.03$ and $F(1, 35)=4.19, p<.05$ respectively. Boys had lower scores for both the ITERS (male $M=3.57$, $SD=0.18$; female $M=4.24$, $SD=0.21$) and FDCRS (male $M=3.43$, $SD=0.16$; female $M=3.91$, $SD=0.17$), see Figures 1 and 2 below.

**FIGURE 1.** Male children were observed in lower quality center-based child care settings at 24 months.
FIGURE 2. Male children had lower total quality ratings in home-based child care settings.

On the M-ORCE, boys were significantly more likely to experience environments higher on Stressful Environment ($M=0.66, SD=0.47$) than girls ($M=-0.76, SD=0.50$), $F(1, 67)=4.27, p<.05$. This finding is consistent with the pattern for male target children to receive lower quality child care and is important since the Stressful Environment composite contains both structural and overall quality variables.

Boys had significantly higher scores than girls on Negative Caregiving Behavior, male $M=0.88, SD=0.60$; female $M=-1.01, SD=0.64$; $F(1, 67)=4.64, p<.04$. Although, the ANOVA of target child gender and Positive Caregiver Behavior was not significant, there was a trend for boys to have a lower mean score ($M=-0.55, SD=0.55$) than girls ($M=0.64, SD=0.59$).

Similarly, boys had lower scores than girls on Positive Caregiver Ratings, male $M=2.69, SD=0.10$; female $M=2.99, SD=0.11$; $F(1,67)=4.13, p<.05$. However, significant gender differences were not found using the Negative Caregiving Rating composite.

*Individual Quality Variables*

MANOVAs were conducted on the interaction between target child gender and ITERS subscales and also for the FDCRS subscales separately. For the ITERS subscales, Wilks’ Lambda yielded a significant result, $F(7, 22)=2.88, p<.03$. However, MANOVA results were did not show a significant interaction between target child gender and the FDCRS subscales, $F(5, 31)=1.96, p<.12, n.s.$
To examine behavioral process differences more specifically, Multivariate Analyses of Variance (MANOVA) examined the effect of child gender on individual M-ORCE variables. The MANOVA examining the interaction between child gender and M-ORCE quantitative variables approached significance, $F(28, 1) = 1.74, p < .06$. Similarly, the MANOVA for child gender and the M-ORCE qualitative rating variables also approached significance with Wilks’ Lambda, $F(18, 37) = 1.74, p < .08$.

Individual findings seemed to indicate that boys were less socially integrated with adults and peers. Boys were observed to be lower than girls on the quantitative variable of high integration with providers, male $M = 0.195, SD = 0.03$, female $M = 0.29, SD = 0.03$; $F(1, 67) = 5.3, p < .03$ and the following qualitative variables: sense of belonging, male $M = 2.86, SD = 0.10$, female $M = 3.29, SD = 0.11$; $F(1, 67) = 8.20, p < .01$, positive regard from caregiver, male $M = 2.82, SD = 0.11$, female $M = 3.15, SD = 0.11$; $F(1, 67) = 4.40, p < .05$, expressed community in the setting, male $M = 2.01, SD = 0.11$, female $M = 2.51, SD = 0.12$, $F(1, 54) = 7.50, p < .01$, and positive emotional climate, male $M = 2.72, SD = 0.12$, female $M = 3.01, SD = 0.13$; $F(1, 67) = 4.5, p < .04$. Also contributing to the finding of lower quality social environments, male children had significantly higher percentages of restrictive actions, male $M = 0.03, SD = 0.01$, female $M = 0.01, SD = 0.01$; $F(1, 67) = 5.60, p < .03$.

**Exploring Gender Ratios in Child Care Classrooms**

To further investigate the processes which may be related to the observations of lower quality care for male target children in our sample we analyzed two potential hypotheses. The first of which was that there was something about groups of boys which
was creating a lower care environment. Goulet et al. (2005) raised the issue of gender ratios in child care classrooms and found higher ratios of boys to be associated with lower quality ratings using the M-ORCE. Thus, we were interested to see if higher ratios of boys were correlated with lower or negative quality processes using the M-ORCE.

In order to examine the gender ratios, we calculated and ran analyses with a new variable, Percent Other Boys in setting. The variable was calculated as the number of males in the setting from toddlers to grade-schoolers (other than the observed target child) as a percent of the total class size, the same calculation used for female ratios by Goulet et al. (2005).

An independent t-test was performed between male and female target children using Percent Other Boys as the dependent variable to determine if either boys or girls in the study were more likely to be with higher percentages of boys in child care classrooms. Results found that male children were significantly more likely to be with other boys in their child care classrooms, \( t(67) = -2.20, p < .04 \); male \( M = 0.513, SD = 0.05 \), female \( M = .357, SD = 0.05 \), see Figure 3 below)
FIGURE 3. The distribution of the percentages of other boys in the classroom shows males are more often with other males in child care.

Analyses were restricted to observed children who were in child care settings with unrelated peers (n= 44). The purpose of this subgroup was to eliminate bias produced by children in care alone or only with siblings. Using this restricted subgroup, the independent t-test between male and female children and Percent Other Boys found a marginally significant difference between groups for male target children to more often be with other males in child care, $t(44)= -1.95, p< .06$; male $M= .44, SD= .06$, female $M= .23, SD= .05$.

When correlated with the ITERS overall score, Percent Other Boys in the setting was found to have a significant, negative relationship with child care quality, $r(24)= -0.412, p< .05$. However, the total FDCRS score was not significantly correlated with the Percent Other Boys in the setting. This may be a result of the even further reduced sample size of only 11 children who were observed with unrelated peers in home-based arrangements at 24 months.
Correlations were conducted between the M-ORCE composites and the Percent Other Boys variable. Most likely due to the reduced sample size, none of the composites of Stressful Environment, Positive Caregiver Behavior, Negative Caregiver Behavior, Positive Caregiving Rating, and Negative Caregiving Rating showed a significant relationship with the Percent Other Boys in the setting with $\alpha = .05$. Interestingly, even though the overall correlation for Stressful Environment was not significant, when correlations were conducted only selecting female target children, a strong, positive correlation was found, $r(32) = .547, p < .01$. Thus, the more boys the female target children were with in settings with unrelated peers, the more stressful the environment.

To look more closely at the specific processes impacted by gender ratios, the variable of Percent Other Boys in the setting was correlated with M-ORCE qualitative variables. Higher percentages of boys were significantly correlated with the following child behaviors: More time spent wandering, $r(46) = .38, p < .01$, lower levels of engagement in activities, $r(46) = .37, p < .02$, less high engagement in activities, $r(46) = -.33, p < .03$, more frequencies of ignoring requests when requests made by caregivers, $r(45) = -.30, p < .05$, and higher frequencies of slow compliance to adult directions approached significance, $r(46) = .27, p < .07$. However, Correlations between the Percent Other Boys in the setting and M-ORCE qualitative variables were not significant with the restricted unrelated peers sub-sample.

Exploring Provider Ratings and Perceptions

The second hypothesis investigated differences in provider perceptions and expectations of male and female target child behavior. Such differences or gender
stereotyped perceptions may have a role in lower quality of care experienced by boys. As part of the data collected, providers filled out three surveys and the following analyses examined provider ratings of the target child from these surveys. The surveys obtain the child care provider’s rating of the child on internalizing and externalizing behavior (CTRF), the provider’s relationship with the child (STRS), and provider ratings of the child’s temperament-related behavior (TBAQ).

First a MANOVA was conducted using the total scores from the CTRF and the STRS as the dependent variables (the TBAQ was not included since the scale does not produce total scores) with child gender as the independent variable. The MANOVA approached significance, $F(2, 64)= 2.64, p< .08$, and the CTRF, boys were rated higher overall ($M= 65.49, SD= 3.91$) than girls ($M= 53.27, SD= 4.34$) by providers. The STRS total score showed a trend for boys to receive lower relationship ratings ($M= 43.60, SD= 3.80$) than girls ($M= 55.77, SD= 4.42$) by providers.

Three MANOVAs were run for each survey using the subscales as the dependent variable and target child gender as the independent variable. The CTRF subscales were not found to have a significant interaction with child gender, $F(8, 58)= 0.80, p< .70$, n.s. The STRS subscales did not have a significant interaction with child gender all together, $F(3, 63)= 1.91, p< .14$, n.s., but providers scored boys significantly lower on the Closeness scale than girls, male $M= 46.60, SD= 3.57$, female $M= 58.27, SD= 3.96$; $F(1, 63)= 4.79, p< .04$, and there was a trend which approached significance for boys to be rated as higher on the Conflict scale than girls, male $M= 55.92, SD= 3.93$, female $M= 45.43, SD= 4.37$; $F(1, 63)= 3.19, p< .08$. The MANOVA between the TBAQ subscales and child gender was significant, $F(6, 59)= 2.29, p< .05$. Examining the individual
subscales found the following significant results: providers rated boys significantly higher on Activity Level, male $M=3.49$, $SD=0.15$, female $M=2.92$, $SD=0.17$; $F(1, 59)=5.26$, $p<.02$; boys were scored as significantly lower on Inhibitory Control, male $M=4.45$, $SD=0.18$, female $M=5.10$, $SD=0.20$; $F(1, 59)=6.89$, $p<.02$ by providers; and providers scored boys to exhibit significantly less positive emotions which is measured by the Pleasure scale, male $M=5.16$, $SD=0.18$, female $M=5.87$, $SD=0.20$; $F(1, 59)=8.45$, $p<.01$.

**Discussion**

*Individual Quality Variables*

Preliminary analyses support gender differences in overall quality, but we wanted to determine what was contributing to global evidence of lower quality care. The FDCRS and ITERS did not tell us much since the individual subscales have been found not to hold up independently and have high redundancy (Perlman, Zellman, & Le, 2004).

Additional analyses of individual M-ORCE variables indicated that the social environment in child care looks worse for male target children in our sample for both variables specific to the target child and to the group. Boys appeared to have less of a social relationship with both caregivers and peers. An ANOVA conducted on target child gender and an additional M-ORCE composite comprised of the sum of standardized counts of high peer integration and dyadic play although not significant, demonstrated the trend of males to have a lower mean peer score than females (male $M=-0.26$, $SD=0.30$; female $M=0.03$, $SD=0.32$; $F(1, 67)=0.05$, $p<.90$). These results seem to indicate that the male target children are isolated in their child care settings.
Exploring Gender Ratios in Child Care Classrooms

The gender ratio findings provide additional support to the idea that boys experience lower levels of engagement and integration with others in child care settings. Although big picture findings were not significant using the Percent Other Boys variable, restricting the sample size further to only children observed with unrelated peers reduced the statistical power and may have contributed to the lack of significant findings.

In comparison to preliminary correlations performed on the entire observed sample, the results went from significant and marginally significant in the entire sample to not significant with the selected sample. This difference could be due to bias as a result of children in care with alone or with siblings, or it could be due to decreased power with the smaller sample.

When examining the FDCRS and ITERS, the sample was divided even further, which contributed to our inability to look at type of care differences in our sample. ITERS negative correlation shows that more boys effects both male and female target children’s quality of care.

Since boys were more likely to be in these settings with a higher percentage of other boys, these findings provide additional support to the idea that they experience lower levels of engagement and integration with others. The significant results hold greater weight given that the analyses involved the reduction of an already small sample.

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1 Analyses were run on children observed in home-based child care settings to see if the results of Goulet et al. (2005) would be replicated in this sample when looking at male ratios. Correlations between Percent Other Boys and social integration were replicated but this study did not find a significant relationship between male ratios and community building.
Exploring Provider Ratings and Perceptions

One of the striking findings was that having higher ratios of boys impacted both boys and girls, which may be the result of interactions between providers and groups of boys which led us to examine provider ratings of children through the surveys. Although the STRS overall MANOVA results were not significant, the significant and marginally significant scales of Conflict and Closeness showed a trend of gender stereotypes. On the STRS, Conflict measure provider perceptions of his/her relationship with the child as negative and having conflict. Closeness items measure the provider’s perceptions of experiences of warmth and affection with and from the child (STRS; Pianta & Nimetz, 1991). Thus, there was a trend for providers to perceive more negative relationships with males than females and less affectionate relationships with male children.

Similarly, the TBAQ results were significant and also seemed to adhere to gender stereotypes. One the TBAQ, the Activity level subscale is meant to capture the child’s locomotor movement through different activities such as free play and quite activities. The Inhibitory Control subscale includes items which obtain ratings on anger-related behaviors such as crying, protesting, and hitting in situations of conflict. The Pleasure Scale includes positive emotions and behaviors such as smiling and laughter (Goldsmith, 1996). Thus, providers rated boys higher on physical activity, lower on preventing anger-related behaviors, and lower on expressing affection and positive emotions—all of which seem to adhere to gender stereotypes of male behavior.

Unfortunately, while a relationship has been established to demonstrate providers uphold gender stereotypes of male children’s behavior, conclusions of the cause or direction of this relationship can not be drawn from the current analyses. From these
results, we do not know if boys are eliciting provider beliefs and behaviors or if provider bias but providers showing stereotyped perceptions of TC behavior. One possible explanation is that gender stereotyped interactions and perceptions of providers who are caring for predominantly male children are negatively impacting the quality of care received. However, future research should be conducted to see if the results would be replicated in other samples and to further determine the nature of the relationship.

Overall, results indicate that boys in this study tend to be in lower quality child care, confirming previous research. More specifically, boys appear to be less socially integrated with caregivers and peers and less engaged in activities. Further investigation found higher percentages of boys to impact target child behavior. The reason for the trend of male toddlers to be with other males is not clear. Future research should be conducted to investigate the process creating uneven male: female ratios in child care settings. This, combined with the fact that boys appear to experience lower quality child care, is cause for concern.

Due to sample size limitations, this study could not look at type of care. However, type of care can produce different ecologies for children and future research should analyze the issue across different care arrangements. Since little research has been done which further investigates the role of child gender in child care quality, this study provides the basis for future research. Empirical research should be performed to attempt to determine the reason and processes behind the finding in this sample for male toddlers to experience lower quality care.

Additionally, determining the outcomes of lower quality care for males should be investigated to see how this finding impacts later development such as school readiness.
Our finding fits into the elementary literature of boys performing worse than girls and boys’ elementary performance may be originating in their early care environments.

Our recommendation, emerging from these findings, is that child care teacher and provider trainings include coursework on gender, with a focus on sensitizing teachers to the importance of avoiding gender-based biases and treating all children with similar care, respect and attention in child care. Parents could also benefit from being sensitized to this emerging gender pattern in research on child care quality. It may be important for them to obtain a sense of their caregivers’ attitudes towards boys and girls as part of their child care selection process.
References


