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Influences on the congruence between parents' and teachers' ratings of young children's social skills and problem behaviors☆

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ABSTRACT

A comprehensive research base exists concerning the congruence between parents' and teachers' ratings of the behavior of typically developing young children. However, little research has been conducted regarding the degree to which parents' and teachers' behavioral ratings of young children with disabilities are congruent. Additionally, previous research has not always correctly proportioned the variance to that between and within classrooms. The purpose of this study was to examine congruence (using hierarchical linear modeling) at the classroom level, rather than the individual student-level, between parents' and teachers' ratings of young children's social skills and problem behaviors. We also examined the potential impact of selected family and child demographic variables, including disability, on this congruence. Consistent with other researchers, we found moderate levels of congruence for children's social skills (as framed by strengths-based statements) and low levels of congruence for problem behaviors (as described using deficit-based terminology). Parents' and teachers' congruence was higher when rating the social skills of young children with disabilities as compared to young children without disabilities.

1. Introduction

Identifying young children who have or are at risk for emotional and/or behavior disorders later in development is an important task since a range of evidence-based interventions are available that can alter the trajectory of social/emotional development (Dunlap et al., 2006). Researchers and clinicians have found that while the indicators of young children's challenging behaviors differ qualitatively from those of older children and adolescents, there are dimensions of behavior that can be reliably identified through structured direct assessments, such as clinical observations and indirect assessments from the solicitation of information from informants such as parents and teachers. One common way of soliciting information from parents and teachers is through the use of behavior rating scales (Demaray & Ruffalo, 1995). Information gathered through the use of rating scales completed by parents and teachers can provide evidence of the persistence of problem behaviors as well as the presence of problem behaviors across situational contexts. Rating scales can also provide evidence of young children's social skills and behavioral strengths (Epstein, Synhorst, Cress, & Allen, 2009; Renk & Phares, 2004).

Wakschlag, Tolan, and Levanthal (2010) indicate that the persistence of behaviors as well as their occurrence across situational contexts are both indicators of behavior disorders in young children. While one would not expect that the behavioral ratings of parents and teachers to be identical, the degree to which they are congruent or are in agreement with each other increases the likelihood that the child has pervasive behavioral challenges that should be addressed. One would also expect the converse to be true – that is, if ratings of social skills (i.e., social competence) are consistent across raters, then one would assume that those skills are established and generalized. Thus, it becomes important to examine the degree of congruence between parents' and teachers' behavioral ratings as well as possible factors that may influence it.

Congruence is defined as the general agreement between two items, and many researchers have examined the congruence between parents' and teachers' information about the social competence and problem behavior for typically developing young children (Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2005; Renk & Phares, 2004; Winsler & Wallace, 2002). They have found that the degree of congruence between parents'

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and teachers' ratings of behavior is moderate in level and is dependent upon the ways in which information is obtained as well as the nature of the behavior under investigation. They have also examined how salient demographic variables influence congruence.

Achenbach et al. (1987) conducted a meta-analysis of the congruence between different informants' ratings of behavioral/emotional problems of children and adolescents between the ages of 18 months and 19 years of age. They report that the degree of congruence was higher for those studies involving children between the ages of 6 and 11 years as compared to studies involving older children and adolescents. Achenbach et al. did not report the degree of congruence between parents and teachers of preschool-aged children.

Renk and Phares (2004) also conducted a meta-analysis of cross informant studies of behavioral ratings of social competence, finding that the mean correlation between parents' and teachers' ratings decreased as children got older. Although there were no statistically significant differences between ratings corresponding to the different age groups, the mean correlation between parents' and teachers' ratings of young children's behavior was $r = .33$ as compared to correlations of .24 and .21 for middle childhood and adolescence, respectively. In a study investigating the psychometric properties of the Social Skills Improvement System (SSIS; Gresham & Elliott, 2008), Gresham, Elliott, Cook, Vance, and Kettler (2010) found that the mean correlation between parents and teachers' ratings of children's and adolescents' social skills and problem behaviors was $r = .30$. All of the children and adolescents were in grades 3 through 12.

1.1. The relationship between demographic variables and ratings' congruence

In examining adults' ratings of children's social skills and problem behaviors, some researchers have investigated the effects of race/ethnicity and household income (as an index of socioeconomic status/SES) on the congruence between parents' and teachers' ratings of children's social competence (Phillips & Lonigan, 2010). These researchers found that congruence between parents' and teachers' ratings of children's behavior was higher for middle-income parents as compared to low-income parents. Others have also found low levels of congruence between parents' and teachers' ratings when low-income parents were from racial/ethnic minority groups (Manz, Fantuzzo, & McDermott, 1999). Differences in parenting styles have been attributed to racial or ethnic status (McWayne, Owsianik, Green, & Fantuzzo, 2008), and it is possible that racial or ethnic status may impact how parents gauge the importance of children's social behavior.

As far as we know, only one study has examined the effects of maternal education on the congruence between parents' and teachers' ratings of preschoolers' behavior (Gagnon, Vitaro, & Tremblay, 1992). These researchers found that maternal education levels affected the congruence between mothers' and teachers' ratings of externalizing behaviors for girls. That is, there were higher levels of congruence (as measured by Pearson correlations) between teachers and mothers who had completed high school versus mothers who hadn't completed high school. The positive effects of maternal education on children's academic and social skills are well-documented (e.g., Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002). Mothers who have higher levels of education might better comprehend the questions asked on rating scales or other protocols. They may also have different expectations for their children's behavior and development, expectations that are more consistent with their children's teachers. Finally, mothers with higher levels of education may have access to resources (e.g., information, social and financial supports) that mothers with lower levels of education lack. Lareau (1987) described these resources as "cultural capital" (p. 82) and discussed the degree to which middle-class and lower-class mothers differed on the amount of quality of cultural capital available to them. She posited that middle-class mothers (who were more highly educated) held child-rearing views more consistent with teachers than lower-class mothers. In addition, it is possible that teachers view more highly educated mothers as more similar to them and that this perception could have an effect on teachers' ratings (Hauser-Cram, Sirin, & Stipek, 2003).

1.2. Gaps in the literature on parent–teacher congruence

While the congruence between parents' and teachers' ratings of typically developing young children's behavior has been well-researched, missing are investigations of the congruence between parents' and teachers' information about the social/emotional behaviors of young children with disabilities. Of the 119 studies included in the Achenbach et al. (1987) or the Renk and Phares (2004) meta-analyses, none examined congruence for this population. Holmbeck et al. (2003) studied the congruence between teachers' and parents' ratings of the behavior of preadolescent boys with spina bifida, but we were unable to identify any other studies that looked specifically at parent–teacher congruence of behavioral ratings for preschoolers with disabilities.

Investigating the congruence between parents' and teachers' ratings of the behavior of young children with disabilities makes sense because young children with disabilities often have different communicative styles or patterns of behavior that differ significantly from their typically developing peers. These styles of patterns of behavior can often make it difficult for others (including parents and teachers) to appropriately interpret verbal and nonverbal cues, thus leading to errors or inconsistencies in understanding or judging behavior (Dunst, 1985; Walden, Urbano-Blackford, & Carpenter, 1997). Since rating the behaviors of young children is a subjective task by nature, it is possible that disability status has an effect on congruence between parents and teachers.

Inclusive ECE classrooms present good opportunities to examine not only the degree to which parents' and teachers' ratings of the behavior of children with disabilities are congruent, but compare their levels of congruence to parents' and teachers' ratings of typically developing children who are enrolled in the same classrooms. Inclusive ECE classrooms serve both typically developing young children and those with a range of disabilities and the same teacher works with both groups of children. These classrooms are sponsored by public school districts following Part B, Section 619 regulations of the Individuals with Disabilities Education Act (IDEA, 2004).

1.3. The impact of teacher perception on congruence and informant discrepancies

In this study, we recognize that it may be difficult for teachers to rate children's behaviors independent of other children as there is evidence that teachers tend to compare one child's behavior with another's (Hamre, Pianta, Downer, & Mashburn, 2007; Phillips & Lonigan, 2010). For example, in a class where a number of students present significant challenging behaviors, a child who exhibits problem behaviors, but to a lesser degree might be rated as more "normal." De Los Reyes and Kazdin (2005) discuss the importance of understanding informant discrepancies and posit that discrepancies are due, in part, to informant bias and perception. That is, informants, whether they are parents or teachers, base their ratings of young children's behavior on their memories or perceptions of children's behaviors that may be affected by a number of variables, one of which might be the behavior of other children in the classroom. Mashburn, Hamre, Downer, and Pianta (2006) used a multilevel modeling framework to determine the

extent to which characteristics of classroom settings and teacher characteristics affected teachers' ratings of preschoolers' behavior. These researchers found that classroom characteristics had a significant effect on teachers' ratings and recommended future studies should also use hierarchical linear modeling (HLM; Raudenbush, Bryk, & Congdon, 2000) when examining this question in order to appropriately account for variance in teachers' ratings that may be attributable to the classroom setting. Waterman, McDermott, Fantuzzo, and Gadsden (2012) also found that a substantial amount of variance in teachers' assessments of children's knowledge and skills were unrelated to children's unique performances on assessments.

Building upon these studies, we used HLM in the current study to examine the congruence between parents' and teachers' ratings nesting students at the classroom level. By doing so, we were able to examine the amount of variance in teachers' and parents' ratings that was shared at the classroom level. This allows for a richer understanding of the level of congruence between raters. One of three scenarios could occur. First, parents and teachers could show similarly high proportions of variance attributable to the classroom level, which would indicate that the children within each classroom exhibit similar levels of social skills or problem behaviors. Second, teachers could show a larger proportion of variance attributable to the classroom level than parents, which could indicate that children exhibit different behaviors in different settings, or that teachers rate the children in their classrooms more similarly to each other than parents. Finally, parents could show a larger proportion of variance attributable to the classroom level than teachers. This would be an indication that regardless of parent rating, teachers may be contrasting the behaviors of children in their classrooms with one another, resulting in students having less similar scores to one another when rated by teachers.

1.4. Purpose of the study

The study aimed to expand on previous research by controlling for variance associated with the classroom level through HLM analysis and adding to the limited work focused on children with disabilities. To this end, the purpose of this study was to answer the following research questions:

1. To what extent is the variance in teacher and parent ratings of children's social skills and problem behaviors associated with the preschool classroom in which the children are enrolled?
2. To what extent are parents' and teachers' ratings of preschoolers' social skills and problem behavior congruent?
3. To what degree is family income, maternal education, child's ethnicity, or child's disability status associated with the degree of congruence between teacher and parent report of children's social skills and problem behaviors?

Based on a review of the extant literature, we hypothesized that higher parent–teacher congruence would be demonstrated when parents were more highly educated, had higher income, and were not of a racial minority group. No studies currently exist which compare the congruence for preschool children who have or do not have disabilities; thus, this research question was exploratory.

2. Method

2.1. Participants

This study represents all data available at the time of the analysis from two cohorts of participants during the 2008–2009 and 2009–2010 academic years. These subsets of teachers were involved in a larger book-reading intervention called Sit Together and Read 2 (STAR2), a study of classroom-based storybook reading practices in ECSE settings. For the purposes of the larger study, teachers self-selected to implement a 30-week book-reading program in their classrooms. Teachers were randomly assigned to one of two conditions. Treatment teachers were asked to implement their read alouds using a print referencing style (for more information on this style of reading see, Justice, Kaderavek, Fan, Sofka, & Hunt, 2009), while the comparison teachers were asked to read using their typical reading style. Parents and teachers completed questionnaires on children enrolled in the study.

Per state guidelines, ECSE classrooms adhered to an inclusive model in which the number of children with disabilities was supposed to be balanced against the number of typical peers; the classrooms could serve up to 12 children. There were 26 different schools that participated. All of the schools were part of public school districts or county-funded programs. Research staff recruited teachers through a presentation about the research study which was given at each school. After the presentation, interested teachers consented to participate in the study.

2.1.1. Teachers

A total of 43 teachers participated in this study in two different Midwestern sites. All teachers were lead teachers in state-supported ECSE classrooms. A majority of the teachers were female (98%, $n = 42$) and Caucasian (91%, $n = 39$). Two teachers were Native American (4%), one was African-American (2%), and one teacher was Asian American (2%). All of the teachers attained a minimum of a four-year degree, with the majority holding a master's degree (79%, $n = 34$). The teachers had an average of 13 years ($SD = 9.43$ years, range = 0–34) of lead teaching experience.

2.1.2. Parents and children

A total of 303 children and their parents participated in the current study. Children were enrolled in the study if (a) their teachers were participants and (b) their parents provided informed consent. Almost all children spoke English in their homes (97%). A majority of the children were male (60%), which was not surprising given the higher frequency of males in special education programs (e.g., Oswald, Best, Coutinho, & Nagle, 2003). The majority of children were Caucasian (74%), 13% were African American, and 12% were other ethnicities (3% Asian American, 1.5% Latino, .5% Native American, and 7% were self-identified as other). At the time of data collection, in the fall of the year, the children had an average age of 4.4 years ($SD = 6.7$ months, range = 3.1–5.8 years; three unreported). Information about disability status, as defined by having an Individual Education Plan (IEP) and/or receiving therapy services (e.g., occupational therapy, physical therapy, speech-language pathology, either in the school setting or privately) was unknown for 30 children. For the remaining 273 children, 56% of children had disabilities ($n = 154$) and 44% of children did not have disabilities ($n = 119$). The vast majority of children with disabilities received speech-language services (96.9%) and occupational therapy services (81.0%), while approximately half received physical therapy services (48.7%) or other services (52.2%), which was primarily adaptive physical education. One-quarter (24.5%; $n = 37$) of children had any known diagnoses, such as ADHD ($n = 4$), autism spectrum disorder ($n = 6$), cerebral palsy ($n = 5$), Down syndrome ($n = 4$), and other ($n = 6$; e.g., Turner Syndrome, Tourette's Syndrome, apraxia).

Annual household income varied considerably with 7% of the children ($n = 21$) resided in homes with an annual income of $5000 or less, 28% of the children ($n = 84$) resided in homes with an annual income of $5001–35,000, 23% of the children ($n = 71$) had a family income of 35,001–65,000, 18% of the children ($n = 55$) had a total family income of 65,001–85,000, and 24% of children ($n = 72$) resided in homes with an annual income of $85,001 or more. For

maternal education, the majority of mothers' highest level of education obtained was a high school diploma (47%, $n = 142$), while 7% did not graduate high school ($n = 20$), 8% had a 2-year degree ($n = 26$, 24% had a bachelor's degree ($n = 72$), 11% had a master's degree ($n = 34$), 2% had a doctoral degree ($n = 6$), and 1% reported Other ($n = 3$).

3. Procedure

Teachers were invited to participate in the larger study and were enrolled once they provided informed consent. As noted, children in their classrooms participated if their teachers enrolled and parents provided information consent. In the fall of 2008 (cohort 1) and 2009 (cohort 2), teachers and parents provided demographic information via comprehensive questionnaires and completed the SSRS on each enrolled child. The data analyzed in this manuscript were collected prior to the start of intervention. In addition, the intervention itself did not have any component related to social competence and rather involved literacy instruction. Therefore, intervention condition is not covaried in any analyses. Teachers who agreed to be part of the study were aware that randomization to conditions would occur, and agreed to this component of the study; however, the actual intervention assigned to each was not implemented by teachers until after all pretest measures (including the SSRS) were implemented. Teachers completed the questionnaires during a time when field assessors were in the preschool centers enrolling and assessing children as part of the larger study. Teacher response rate for the SSRS was 94.6%. Parents completed the questionnaires during an individual meeting conducted at a neutral location or in their homes (the exact location was based on parent preference); during this time, they were informed on their responsibilities for participation in the larger study and completed a battery of questionnaires. If parents requested additional time to complete the SSRS and questionnaire, they could return the forms via the teacher. If parents did not promptly return the forms, we asked the teachers to remind the parents and collect the forms at school. The parent response rate for the SSRS was 88.9%.

3.1. Measures

In addition to the teacher and parent questionnaires which provided basic demographic information, one additional measure was used in the current study. In the fall of the academic year, teachers and parents completed the Social Skills Rating System (SSRS; Gresham & Elliott, 1990) for each participating children in the study.

3.2. Social Skills Rating System

The SSRS is a multi-rater series of rating scales that includes ratings from teachers, parents, and students. The preschool version, used in the current study, includes a teacher and parent version (with no student ratings) and assesses two domains, namely social skills and problem behaviors. Across both parent and teacher versions, social skills are assessed in the sub-domains of cooperation, assertion, responsibility, empathy, and self-control. Problem behaviors are assessed in the sub-domains of externalizing and internalizing behavior problems. Parents and teachers complete different but comparable versions of the SSRS. For the social skills assessment, teachers respond to 30 items assessing social skills, while parents respond to 39 items. While some items are identical across the two versions (e.g., "Follows your directions"), other items are worded to reflect behavior found in specific environments (e.g., parents answer "Attempts household tasks before asking for your help," while teachers answer "Attempts classroom tasks before asking for your help"). We computed Cronbach's alpha as a measure of reliability for parent and teacher ratings of children's social skills. Alpha levels were high at .93 and .97 for parents and teachers, respectively. The problem behavior assessment, consisting of 10 items, is identical across both parent and teacher versions. Respondents are asked to mark whether or not each of a set of specific social skills or problem behaviors occur. We computed Cronbach's alpha for parent and teacher ratings of children's problem behaviors. Alpha levels were high at .80 and .83 for parents and teachers, respectively. In addition to rating the frequency with which behaviors occur, respondents are also asked to rate the importance of the behavior. However, for the purposes of this study, only responses for frequency were utilized, which are derived into standard scores. All analyses were conducted using standard scores.

The preschool version of the SSRS is a nationally standardized instrument. As published in the SSRS manual, the teacher scale demonstrates adequate internal consistency reliability for the total social skills ($\alpha = .94$) and total problem behaviors ($\alpha = .82$). The parent scale also has adequate internal consistency reliability for the total social skills ($\alpha = .90$) and total problem behaviors ($\alpha = .73$). The internal consistency for our sample is well-aligned with the publishers' findings. The teacher scale's four-week test–retest reliability coefficients range from .85 to .88. The parent scale's report four-week test–retest reliability coefficients range from .58 to .87. The SSRS manual reports several studies offering validity data for the SSRS based on test content, relationships with other measures, and the internal structure of items (Gresham & Elliott, 1990). One validity study investigated the relationship between the SSRS Teacher form and the Child Behavior Checklist–Teacher Report Form (CBCL-TRF; Achenbach & Edelbrock, 1983). The SSRS Externalizing and the CBCL Externalizing scores were highly correlated ($r = .75$), as were the SSRS Problem Behaviors Total score and the CBCL Total score ($r = .81$). A moderate correlation was found between the SSRS Internalizing scores and the CBCL Internalizing scores ($r = .59$).

4. Results

Because each teacher rated the social skills and problem behaviors of multiple children within their classroom (average of seven students in each of 43 classrooms), some variance in the SSRS ratings may be attributable to the teacher rather than the student. To that end, data were analyzed using Hierarchical Linear Modeling (HLM), which accounts for this nesting (Raudenbush et al., 2000). Prior to analyses, we conducted a preliminary investigation of variables to determine whether data adhered to assumptions of normality, linearity, and homoscedasity as well as to check for outliers. Data did not exceed three standard deviations from the mean, and for our sample size, skewness and kurtosis did not exceed a value of .29 or .56 respectively as outlined in Tabachnick and Fidell (2011). No outliers were present and data met assumptions for analysis.

4.1. Classroom-level variance

The first research question was to determine how much variance in student social skills and problem behavior was attributable to the classroom level as opposed to the individual student level. A high percentage of similarity in variance attributable at the classroom level between teacher ratings of student performance could be because students with similar behavior skills are grouped in similar classrooms, while a low percentage of similarity may suggest that teachers are more likely to rate students similarly to one another (teacher perceptions) or children are behaving differently in different settings (i.e., home versus school).

To investigate this question, we fitted an unconditional model (a model with no predictors of the outcome) to the data for teacher SSRS ratings and parent SSRS ratings of children's social skills and problem behavior. This partitioned the variance of teacher and parent SSRS ratings on each subscale into portions attributable to the student level and the classroom level.

Results indicated that 29.2% and 23.6% of the variance in teacher SSRS ratings of children's social skills and problem behaviors, respectively, was attributable to the classroom level. That is, almost one-third of the variance in teacher ratings' was attributable to the similarity in which an individual teacher rated multiple students in his/her classroom and not attributable to differences at the individual student-level.

We also ran an unconditional model of parent ratings of children's social skills and problem behaviors. These models partitioned the variance in parent ratings due to the classroom level as opposed to the child level. In contrast to the teacher results, only 1.1% and 2.9% of the variance in parent SSRS ratings of children's social skills and problem behavior, respectively, was attributable to the classroom level. That is, parents were not rating the children as having similar behavior scores as other children in their classroom.

4.2. Congruence between parent and teacher ratings

For the second research question, we investigated the degree of congruence between parent and teacher SSRS ratings for both children's social skills and problem behavior. We employed two different analytic strategies. First, we conducted paired sample two-tailed *t*-tests to determine whether parent SSRS ratings were significantly different from teacher ratings for the two norm-referenced subtests. Second, we examined the similarity between parent and teacher score on the two subtests using HLM. HLM allowed for the modeling of any potential variance that could be shared from a teacher providing ratings for multiple children. These analyses estimated the average correlation between parent and teacher SSRS ratings at the classroom level. For the HLM analyses, *z*-scored variables were used. This allowed more readily for the inclusion of moderator variables with respect to the third research question.

Table 1 presents the means, standard deviations, and ranges for parent and teachers SSRS ratings of children's social skills and problem behaviors. Teachers rated children significantly higher on social skills ($t = -3.53$, $p < .001$) and significantly lower on problem behavior ($t = 4.12$, $p < .001$) than parents. As compared to the average national sample ($M = 100$, $SD = 15$), children in this sample were rated at or slightly below the average for social skills by teachers and approximately one-half of a standard deviation below average by parents. Children were rated as average in problem behaviors by parents but were rated as having marginally fewer problem behaviors by teachers (see Table 1).

Second, the same relations were examined at the classroom level. Because we utilized HLM to account for nesting, the correlation between parent and teacher report of social skills and problem behavior represents the average classroom-level correlation, rather than the average correlation for individual students. Teacher SSRS rating for social skills or problem behavior was predicted by parent report of the same construct. Effect sizes are based on *r* values, with $r = 1$, .3, and .5 as small, medium, and large effect sizes respectively (Cohen, 1988). For ratings of children's social skills, parent and teacher SSRS ratings were significantly correlated at .40 ($p < .001$), equating to a medium-large effect size. For problem behavior, parent and teacher reports were still significantly correlated but to a much less degree at $r = .17$ ($p = .002$), which equates to a small effect size. In addition, we conducted correlations between individual teachers and parents using standard scores (not accounting for nesting). The correlations were almost identical. For social skills and problem behavior respectively, the correlations between parents and individual teachers were $r = .45$ ($p < .01$; compared to $r = .40$ for the classroom-level correlation) and $r = .14$ (($p < 05$; compared to $r = .17$ for the classroom-level correlation).

4.3. Family and child demographic characteristics as moderators of congruence

The third research question explored whether child and family demographic characteristics moderated the relation between parent and teacher SSRS ratings of children's social skills and problem behavior. We used teacher report of child behavior as the outcome variable. Four child/family demographic variables were examined in HLM: (a) maternal education, (b) annual family income, (c) child ethnicity (0 = Caucasian, 1 = non-Caucasian), and (d) child disability status (0 = no disabilities, 1 = disabilities). We computed interaction terms for each demographic variable with parent SSRS ratings of both social skills and problem behavior (e.g., parent social skills rating * child ethnicity). This allowed for the examination of how the relation of parent with teacher ratings of the outcome changed dependent on the included demographic variable.

For each of these, we examined the variance component to determine whether each predictor should be fixed (to the mean of each classroom) or random (allowed to vary within the classroom). We retained fixed effects when variance components were not significantly different from zero ($p > .05$) using a chi-square test. When we retained fixed effects, we did not include the corresponding error term for the specified variable in the equation. Table 2 indicates whether effects were fixed or random for each model.

Table 2 presents the model results for the potential moderators of parent–teacher congruence on problem behavior and social skills. For example, in model 2 examining family income as a moderator, the average teacher-rated child's social skills score (represented by the coefficient β_0) was −.03. For each increase in family income (β_2), the average teacher-rated child problem behavior score was increased by .11. The congruence between parent and teacher rating score, for a family with average family income, was .39 (β_1). Finally, the interaction term (β_3) represents the extent to which parent and teacher congruence changes depending on family income. In this case, and for all but one model, the interaction term is non-significant, indicating no significant change in the relation between parent and teacher ratings of problem behavior based on the examined demographic variable.

For social skill ratings, only child disability status was a moderator in the congruence between parent and teacher ratings; higher congruence was reported for children with disabilities (see Fig. 1). In Fig. 1, the solid line represents students with disabilities, while the dotted line represents those without disabilities. Each line represents the congruence of teacher and parent SSRS social skills ratings. A steeper slope indicates higher congruence. The significant interaction of disability status with parent report indicates that the slopes of these lines are different from one another. The solid line is steeper than the dotted line, indicating that students with disabilities are rated more similarly (slope = .34) than those without disabilities (slope = .14).

To further probe this interaction, we conducted a post hoc analysis of the standard scores at the individual child-level (i.e., HLM was not employed). The mean scores of social skills and problem behaviors provided by parents and teachers for children with disabilities and those without showed significant differences. As Table 3 demonstrates, the parents and teachers both scored children with disabilities significantly lower in social skills and higher in problem behavior than children without disabilities. Additionally, it is of note that parent ratings for social skills and problem behavior had wider variability for children with disabilities than for children without disabilities.

Table 1
Descriptive statistics for parent and teacher ratings of children's social skills and problem behavior on the SSRS.

	Social skills		Problem behavior	
	Parent	Teacher	Parent	Teacher
Mean	93.61	97.71	99.54	95.83
SD	17.86	20.43	13.81	11.93
Range	40–130	40–130	85–145	85–134

Table 2
Family and child demographic characteristics as moderators of congruence between parents' and teachers' SSRS ratings of children's social skills and problem behavior.

	Social skills				Problem behaviors			
	Coefficient	Standard error	*t*	*p*	Coefficient	Standard error	*t*	*p*
Model 1: maternal education								
Intercept (β_0)	−.03	.09	−.31	.76	.01	.09	.14	.89
Parent SSRS (β_1)	.47***	.12	3.89	.000	.17[a]	.13	1.25	.21
Maternal education (β_2)	.05	.05	1.07	.29	−.07[a]	.06	−1.32	.19
Parent SSRS* Maternal education (β_3)	−.09	.12	−.76	.45	−.02[a]	.13	−.12	.90
Model 2: family income								
Intercept (β_0)	−.03	.09	−.37	.71	.01	.09	.14	.89
Parent SSRS (β_1)	.39***,[a]	.09	4.32	.000	.13[a]	.09	1.38	.17
Family Income (β_2)	.11*,[a]	.05	2.18	.03	−.19***,[a]	.06	−3.40	.001
Parent SSRS* Family Income (β_3)	−.01[a]	.09	−.14	.89	.01[a]	.09	.11	.91
Model 3: child ethnicity								
Intercept (β_0)	−.03	.09	−.36	.72	.001	.09	.02	.99
Parent SSRS (β_1)	.41***,[a]	.06	7.05	.000	.25***	.07	3.82	.001
Child Ethnicity (β_2)	−.05[a]	.05	−.93	.35	.08	.06	1.32	.20
Parent SSRS* Child Ethnicity (β_3)	−.02[a]	.06	−.43	.67	−.14	.09	−1.52	.14
Model 4: child disability status[b]								
Intercept (β_0)	.004	.08	.04	.97	.03	.10	.30	.77
Parent SSRS (β_1)	.14[a]	.09	1.65	.10	.25**,[a]	.10	2.58	.01
Child disability status (β_2)	−.28***,[a]	.05	−5.72	.000	.17**,[a]	.06	3.13	.002
Parent SSRS* Child disability status (β_3)	.21**,[a]	.08	2.63	.01	−.10[a]	.09	−1.09	.28

[a] The effect was fixed in the model due to variance component not being statistically significant (as tested by a χ^2 test);
[b] sample size for child disability status analysis was 273 children.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

5. Discussion

Three research questions guided this study. The first concerned determining the extent to which variance in teachers' ratings of children's social skills and problem behaviors could be attributed to the classroom level versus the individual level. The second question focused on the degree to which parents' and teachers' ratings of preschoolers' social skills and problem behavior are congruent, whereas the third question concerned determining the extent to which certain demographic and child factors were associated with the degree of congruence between teacher and parent report of children's social skills and problem behaviors.

Overall, the results presented here indicate that for this sample of children, parents, and teachers, the degree of congruence between parents' and teachers' ratings approximates the degree of congruence for parents and teachers of typically developing preschoolers as found by other researchers (see Achenbach et al., 1987; Renk & Phares, 2004). Our results indicate that, overall, parents' and teachers' ratings of young children's social skills and problem behaviors were both significantly correlated but with differing effect sizes. The effect size for the correlation of social skills and problem behavior was medium and small, respectively, and both were statistically significant. Importantly, these results are consistent with findings by other studies as cited by Achenbach et al. and Renk and Phares, and thus indicate convergence across samples and studies for these particular research questions.

The results of this study are also consistent with those discussed by Synhorst, Buckley, Reid, Epstein, and Ryser (2005), who found greater levels of cross-informant congruence for behavioral rating scales typified by a "strengths-based" rather than a deficit model

Table 3
Differences in mean scores on Social Skills and Problem Behaviors for children with and without disabilities as reported by parents and teachers.

	With disabilities ($n = 154$)		Without disabilities ($n = 119$)		*t*	
	Social skills mean (standard deviation)	Problem behavior mean (standard deviation)	Social skills mean (standard deviation)	Problem behavior mean (standard deviation)	Social skills	Problem behavior
Parent report	86.45 (17.17)	101.82 (14.47)	102.24 (14.14)	96.57 (11.78)	8.33***,[a]	−3.31***,[a]
Teacher report	90.90 (19.27)	97.95 (12.13)	107.46 (17.25)	92.82 (11.65)	7.37***	−3.53***

Note: All *t* values reported are for equal variances not assumed.
[a] Equal variances were not assumed according to Levene's test of equality of variance.
*** $p < .001$.

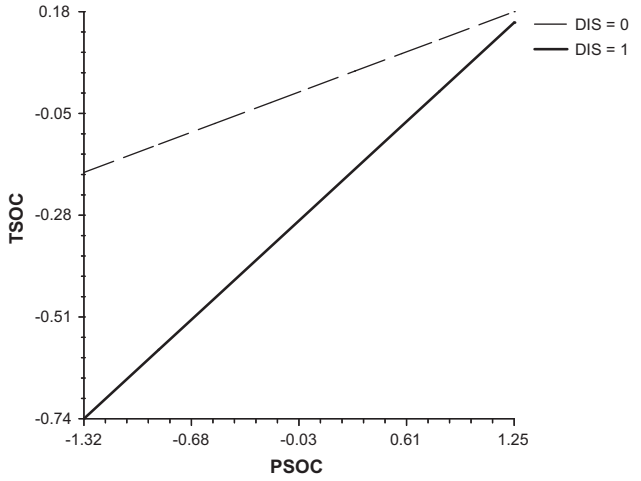

Fig. 1. Moderating influence of child disability status on congruence between parents' and teachers' reports of children's social skills.

of social/emotional skills. That is, in the present study, rating scale items focused on children's social skills were worded in a positive light (e.g., "Follows your instructions," "Shows interest in a variety of things") as compared to items focusing on problem behavior (e.g., "Has temper tantrums," "Argues with others"). The ways in which raters regard social skills (i.e., from a strengths-based approach) and problem behavior (i.e., from a deficit model) may contribute to the substantial differences we found between ratings of social skills and problem behavior. This is all the more interesting since parents and teachers used different versions of the SSRS (Gresham & Elliott, 1990) to rate social skills and identical versions to rate problem behaviors. One would expect, but was not borne out in the current study, that identical measures would yield more congruency between parents' and teachers' ratings. Future research should be conducted to determine if this result is spurious or genuine in nature.

When examining cross-informant congruence, we chose to account for the potential variance that might occur when teachers rate the social skills and problem behavior of groups of students in their classrooms. As stated previously, it is possible for teachers' ratings of a child's behavior to be influenced by the behaviors of other children in that classroom (Mashburn et al., 2006). Instead of regarding teachers' ratings of individual children as independent from each other, our analysis using intra-class correlations (Raudenbush et al., 2000) regarded teachers' ratings as "nested" within classrooms. Using this approach, we found the second scenario described earlier in the manuscript to be true. That is, nearly one third of the variance in teachers' ratings of children's social skills and one-quarter of the variance in teachers' ratings of children's problem behaviors was attributable to the classrooms in which they were enrolled. At the same time, there was virtually no variance in parent ratings attributable to the classroom-level, which indicates that specific classrooms are not likely composed of more children with high social skills or high problem behaviors than others. It may be possible that the differences in teachers' ratings were a result of children behaving differently in different settings. For example, differing expectations of teachers and parents may result in children displaying different behaviors. Indeed, there is ample evidence to suggest that teachers' expectations affect children's behavior and development (Kuklinski & Weinstein, 2001; Rosenthal & Jacobson, 1968). However it may also be possible that average classroom differences in children's ratings may be more attributable to teachers rating children differently on the SSRS. Thus, teachers' ratings of individual children's behavior might be influenced by the behavior of other children in the classroom, thereby reducing the variance in teachers' rating. This result is consistent with Waterman et al.'s (2012) findings that a large portion of the variance attributable to teachers' assessments of children's skills could not be explained by children's actual performance.

It is interesting to note that the variability in parents' ratings was significantly different between children with disabilities and those without, while no such difference existed for teachers' ratings. It may be that no significant difference in variability between teachers' ratings of children with and without disabilities may also be attributable to teachers' ratings being influenced by other students' behavior. That is, teachers may be rating children in their classroom similarly. It may also be that teachers' ratings may be more affected by social desirability in that they are conscious of not rating children with disabilities as more poorly behaved than children without disabilities.

These results are important, particularly when considering the current emphasis on continual progress monitoring of all children's social/emotional development under a "response to intervention" model (Coleman, Roth, & West, 2009). The utility of progress monitoring efforts may be undermined when a teacher is asked to rate ALL children's behavior on a regular basis. In addition, as Waterman et al. (2012) emphasize teachers and others are using data obtained from teacher assessment to make important decisions about children's future. At the very least, teachers who conduct assessments on young children's knowledge, skills, and dispositions must be properly trained to conduct these assessments. This will help to limit the possible impact of teacher bias in terms of rating individual children's behavior in relation to the behavior of other children in the same classroom.

Our third research question focused on demographic variables that might impact the degree to which parents' and teachers' ratings of social skills and problem behaviors are congruent. While others have found the degree of congruence to be influenced by maternal education (Gagnon et al., 1992), SES (Phillips & Lonigan, 2010) and minority group status (Manz et al., 1999), we found no such relationship which contradicted our hypotheses. We did, however, find that the child's disability status did predict the degree of parent/teacher congruence on social skills ratings. Specifically, greater congruence was evident between parents of children with disabilities and their children's teachers (as compared to parents of typically developing children and their children's teachers). This is somewhat surprising since the presence of a disability, specifically communication problems which were almost universal to our sample, can impede an adult's ability to interpret children's behavioral cues and communicative intentions (Dunst, 1985; Walden et al., 1997) and thus make it more difficult to judge a child's social skills which would be manifested in lower levels of congruence between parents' and teachers' ratings. For this sample of children, parents, and teachers, however, the presence of a disability was associated with higher levels of congruence with regard to children's social skills. It may be that parents and teachers of young children with disabilities may have more opportunities to communicate about children's progress and performance, thus increasing the degree to which they share similar perspectives and agree on children's social skills. Higher levels of congruence between teachers and parents of children with disabilities may also be a result of increased knowledge that parents have about child development in general or their child's development in particular as well as be more savvy and knowledgeable about the educational system. They may also be a result of early intervention (EI) experiences that parents and children may have had. As EI focuses on meeting the needs of both children and their families, it may be that this focus on families paid off with parents who were more knowledgeable about their children's social competence. Replications of this study should be conducted to determine the consistency of these results.

6. Limitations of this study

Four limitations of this study warrant note. First, these data were collected at the beginning of the school year, and it is possible that teachers did not know children as well as they would have if the study was conducted later on in the school year. It would be interesting to replicate this study to examine whether parent/teacher congruence changes or is consistent over time. Second, our sample was largely Caucasian which limits the generalizability of these findings.

Third, it is important to note that the data we report reflect parents' and teachers' perceptions of children's social skills and problem behaviors and those perceptions are not based on specific observations but rather general rating scales. Others have reported that congruence increases when ratings are based on specific observations of children's behavior (De Los Reyes & Kazdin, 2005). Therefore, the results of this study should not be generalized to behavioral ratings obtained through measures that rely on specific observations of children's behavior.

Finally, although we do have information about the types of specialized services the children on IEPs received, we have limited information about their diagnoses. We are also missing information about the disability status for 30 of the children. Since the overwhelming majority of children received multiple services, such as speech/language therapy, occupational therapy, and physical therapy, we posit that they had generalized developmental delays as opposed to more specific diagnoses. Identifying more specific information about all of the children's special needs would help us to further disaggregate data on disability conditions and conduct analyses that would allow us to determine if there is a relationship between the level of congruence between parents' and teachers' ratings and specific disability conditions. It would also allow us to examine if children's behaviors correlated with specific disability conditions affected the degree of congruence between parents' and professionals' ratings of social competence and problem behavior. We look forward to future research that can engage in those types of analyses.

7. Implications and future research

This study has important implications for both practice and research. First, as was discussed earlier, efforts to monitor the social skills and problem behaviors of young children should proceed with caution given the results we found that close to one third of the variance in teachers' ratings of children's social skills and one quarter of the variance in teachers' ratings of children's problem behaviors were attributable to the classroom in which children are enrolled. These results provide further evidence that rating children's behavior is a comparative task, one that is influenced by the behavior of all of the children in the classroom. Progress monitoring efforts that rely on global ratings of children's behavior may be hindered by this nesting effect. Program administrators and others who provide supervision to teaching staff should ensure that teachers are properly trained to administer the assessment. It is also appropriate to provide "booster trainings" to ensure continued alignment to the assessment directions and avoid judgments made about individual children's behavior that are based on behavior of the other children in the classroom.

In addition, future research should be conducted that examines congruence between parents' and teachers' ratings of young children's social skills and problem behaviors while accounting for potential unintentional bias that might affect teachers' ratings. The Achenbach et al. (1987) meta-analysis is a seminal work in this area, however, it was conducted before more sophisticated statistical methods such as HLM were used. Using these types of analyses might help us understand more about the true nature of the relationship between parents' and teachers' ratings of social skills and problem behavior.

Secondly, the results of this study have important implications for continued parent–teacher collaboration since we found that congruence between parents and teachers was higher when the child had an IEP. We posit that parents and teachers of young children with disabilities have more opportunities to discuss children's abilities and skills when they serve together on IEP teams. This is especially true for young children with disabilities whose families might have been engaged in EI, since it is often at this age that we see the most positive sorts of parent–professional relationships (Turnbull, Turnbull, Erwin, & Soodak, 2006). While this may be a potential explanation, it is important to study this phenomenon further to determine if these results are replicable.

Our results also found that parents and teachers displayed lower congruence for problem behaviors than social skills. Overall, teachers report lower levels of problem behavior than parents. As part of teachers' preservice training, teachers learn classroom management strategies which emphasize proactive strategies to prevent student misbehavior from occurring. Thus, students may indeed experience fewer temper tantrums in classroom versus home settings. In addition, it may be that teachers are more sensitive than parents to children's ability to engage in self-regulation and impulse control and may, in fact, be comparing a child's problem behavior to what they consider typical to that particular child instead of against the norm. Finally, patterns of teachers' ratings may be attributable to the "classroom effect" as opposed to singular attention to a specific child's behavior. At any rate, as many have pointed out, discrepancies in ratings between parents and teachers often provide the context for meaningful discussion and dialogue about how to best support children's development (Achenbach et al., 1987; Bagnato, Neisworth & Munson, 1997; Dinnebeil & Rule, 1994; Renk & Phares, 2004; Yates, Ostrosky, Cheatham, Fettig, Shaffer, & Santos, 2008).

Finally, we believe it is important to conduct further research focused on the potential effects of describing skills or competencies from a strengths-based perspective (as opposed to a deficit model) have on the congruence between parents' and teachers' ratings. The fields of early childhood education and early childhood special education emphasize the importance of a strengths-based approach to the provision of specialized services (Sandall, Hemmeter, Smith, & McLean, 2005). Others have also advocated for the adoption of a strengths-based approach to assessing young children's social competence (Cox, 2006; Epstein & Synhorst, 2008; Griffith, Hurley, Trout, Synhorst, Epstein, & Allen, 2010), arguing that focusing on the strengths a child possesses enables teachers and clinicians to expand the range of information available about children and better understand variables that contribute to resiliency and protective factors. In addition, these researchers argue that focusing on a child's strengths instead of his or her weaknesses is a more positive approach that may be viewed more favorably by parents (and thus motivate parents to become more involved in the assessment process). Identifying important social strengths may also allow teachers and therapists to more easily plan effective interventions and design learning environments that build on and enhance these developmental strengths.

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