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Assessments of Student-Teacher Relationships in Residential Treatment Center Schools

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Abstract
Students in residential treatment center (RTC) schools are likely to have histories of extreme or ongoing relational trauma (e.g., abuse and neglect by primary caregivers), have substantial interpersonal and relationship problems, and exhibit many high-risk behaviors. Accordingly, these students may have particular difficulty forming positive relationships with teachers, yet student-teacher relationship quality in RTC schools has not been empirically studied. This study examines links between RTC school students' assessments of their relationships with teachers and their perceptions of self and others. Participants were 113 students in 2 RTC schools from 5th to 12th grade. Results indicate that male and female RTC students' positive perceptions (of self and others) are linked to positive assessments of their relationships with teachers. However, for girls in RTC schools, negative perceptions of self are linked to less positive assessments of the teacher-student relationship. Implications are discussed.

In the United States in 2009, an estimated 50,000 children and adolescents were in residential treatment centers (RTCs) (Fact Sheet, 2009). RTCs are licensed, 24-hr facilities providing mental health treatment, and the majority of children and adolescents in RTCs attend school on-site instead of in the community public school setting (US Dept. of Health & Human Services, 2009). Students in RTCs are very likely to have histories of extreme or ongoing relational trauma (e.g.,

abuse and neglect by primary caregivers), and to have experienced multiple placements within the foster care system (Brady & Caraway, 2002; Hummer, Dollard, Robst, & Armstrong, 2010; Kalke, Glanton, & Cristalli, 2007; Rivard, McCorkle, Duncan, Bloom, & Abramowitz, 2004). As a result, they generally have significant socioemotional and behavioral problems (Gauthier, Fortin, & Jeliu, 2004). For example, adolescents in these programs typically have substantial interpersonal and relationship problems and exhibit many high-risk behaviors, including self-harm, aggression toward others, and significant property damage (Kalke et al., 2007; Nickerson, Brooks, Colby, Rickert, & Salamone, 2006). In addition, students with poor social and emotional development often suffer academically due to multiple stressors such as disruptions in schooling and ongoing home-life instability (Zins, Bloodworth, Weissberg, & Walberg, 2007).

Students who have experienced significant relational trauma (such as those in RTC schools) interact with and perceive others in a fundamentally different way than students who have not experienced such trauma (Cole et al., 2009; Duchesne & Larose, 2007). Specifically, they tend to perceive themselves and others negatively, and this negative view impinges on their ability to form healthy, positive relationships with important others, such as teachers. Indeed, individuals' trauma symptomology profoundly affects their interactions with others (Bakermans- Kranenburg, Van IJzendoorn, & Juffer, 2005; Greenwald et al., 2012). At the same time, teachers in on-site RTC schools typically do not receive any training related to teaching students who have experienced childhood abuse and neglect or trauma (Coleman & Vaughn, 2000; Edwards & Chard, 2000), nor are they required to have had such experience or training (Walter & Petr, 2007). The American Academy of Child and Adolescent Psychiatry (2010) has recommended that RTC schools employ teachers trained to work with students with mental illness or learning disabilities, but no federal laws regulate RTC practices. In addition, and perhaps as a consequence, very little is known about how to make schools more supportive for children and youth who have experienced trauma (Tishelman, Haney, Greenwald O'Brien, & Blaustein, 2010) or about experiences of students in RTC schools (Dods, 2013; Nickerson, Hopson, & Steinke, 2011). Researchers also know positive student- teacher relationships can be protective for at-risk students, such as those from poverty (Gregory & Weinstein, 2004; Hamre & Pianta, 2001; Hughes, Gleason, & Zhang, 2005; Liew, Chen, & Hughes, 2010) and those exhibiting behavioral problems (J. A. Baker, 2006; Hamre & Pianta, 2001; Hughes, 2011), so it is important to understand how students in RTC schools assess the quality of this relationship. It is likely that RTC students with more negative perceptions of self and others will assess their relationships with teachers more poorly than do students with more positive perceptions, but no research has addressed this question. Thus, the purpose of this study is to examine associations between RTC students' perceptions of self and others and their assessments of the quality of their relationships with teachers. The goal is to provide information for teachers in RTCs or other institutional schools who work with students with trauma symptomology.

Characteristics of Children and Adolescents with Trauma Histories

Children and adolescents who have been abused and neglected by primary caregivers have experienced trauma within the context of a relationship that is supposed to be nurturing and protective. As a result, they typically experience attachment-related disturbances, such as believing that the world is not safe; that others cannot be trusted; and that they, themselves, are un-

worthy of love and nurturance (Chaffin et al., 2006; T. O'Connor & Zeanah, 2003). Relational trauma contributes to the etiological foundation of many serious emotional and behavioral disorders (Chaffin et al., 2006). In fact, no other social risk factor has a stronger association with developmental psychopathology in adulthood than maltreatment in childhood (Cicchetti & Toth, 1995; Svanberg, 1998; Weich, Patterson, Shaw, & Stewart-Brown, 2(09).

Individuals who experience abuse and neglect are at risk for impairment in social interaction and communication (Mukaddes, Bilge, Alyanak, & Kora, 2000; Sheperis, Renfro-Michel, & Doggett, 2003; Weich et al., 2009), having low empathy (Hall & Geher, 2003), developing somatic complaints or other anxiety disorders (Weich et al., 2009), depressive symptoms (Cicchetti & Toth, 2009; Kaufman & Cicchetti, 1989; Salinger, Feldman, Hammer, & Rosario, 1993; Stafford, Zeanah, & Scheeringa, 2003), externalizing behaviors, substance abuse, and criminal behavior (Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998; Dozier et al., 2006; Rogosch, Oshri, & Cicchetti, 2010). Furthermore, they suffer from more cognitive deficits and academic difficulties than nontraumatized individuals (Bücker et al., 2012; Dozier et al., 2006; Eckenrode, Laird, & Doris, 1993; Gould et al., 2012; Shonk & Cicchetti, 2001).

Although there is a great deal of research on the impact of relational trauma, little attention has been given to the other experiences of children in residential treatment, although there has been some recent work on students' feelings about teachers (Dods, 2013) and school connectedness (Nickerson et al., 2011). Brady and Caraway (2002) contended that, in addition to the trauma related to abuse and neglect, individuals who have been removed from their families' care are likely to have had a number of additional traumatic experiences in the context of their community and in residential treatment. These experiences include witnessing violence, losing primary caregivers, decreased contact with siblings and other family members, and frequent moves in schools and placements (Albus & Dozier, 1999; Sprang, Clark, Kaak, & Brenzel, 2004; Vacca, 2008). Because these children are either temporarily or permanently parentless and have experienced such pervasive trauma, their ability as adolescents to take guidance from caring adults is compromised (Dods, 2013; Peacock & Daniels, 2(06). For these individuals, developing social support from other caregivers, peers, and people within the school setting may be more challenging than for peers without relational trauma histories (Schwartz & Davis, 2006), but this ability plays an increasingly important role in fostering their feelings of security, safety, and trust with adults (i.e., decreasing trauma symptomology; Brady & Caraway, 2002; Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004; Greenberg et al., 2003; Seeman, Singer, & Ryff, 2002). Although there is a growing appreciation of the high level of need among these individuals who have (a) experienced severe early relational trauma at the hands of their caregivers, (b) spent many years involved in the foster care system, and/or (c) experienced multiple placements, this is not matched by an accumulation of knowledge about the nature of the attachment and trauma-related disturbances that these individuals exhibit or strategies for evidence-based intervention (T. O'Connor & Zeanah, 2003; Wethington et al., 2008).

There remains a lack of research about the specific characteristics of children and their experiences within RTCs (Brady & Caraway, 2002; Hussey & Guo, 2005; Jones & Lansdverk, 2006; Moses, 2000; Nickerson et al., 2011). According to Peacock and Daniels (2006), most children in RTCs have directly or indirectly experienced persistent relational trauma. As a result, a priority for administrators, funding sources, and mental health professionals is to better understand how to most effectively treat the individuals who are placed in this setting. Nevertheless, very little em-

pirical data have been collected to provide this understanding (Brady & Caraway, 2002; Greenwald et al., 2012; Hussey & Guo, 2005; Jones & Lansdverk, 2006).

Attachment and Relational Trauma

Accumulated evidence clearly demonstrates the importance of early mother-infant and father-infant interactions to development (Armstrong, Fraser, Dadds, & Morris, 2000; Bakermans-Kranenburg et al., 2005; Bates & Dozier, 2002; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Nylen, Moran, Franklin, & O'Hara, 2006; Wan & Green, 2009). Ideally, these early interactions forge an attachment that promotes a child's security, safety, and affective regulation (Bowlby, 1982; Schore, 2001) where the child comes to recognize an adult as a reliable source of safety and love (Saakvitne, Tennen, & Affleck, 2003). In a secure attachment, as the child develops, attachment bonds increase in number across the lifespan. However, if the child's primary caregiver is inconsistent because of mental illness, substance abuse, or involvement in a domestically violent partnership, the child is at tremendous risk of getting an inadequate response when seeking help or love (Stafford et al., 2003). It is worse still when a child receives an abusive response from the person who is also the provider of basic needs and the one who is supposed to provide emotional soothing (Bakermans-Kranenburg et al., 2005; Dozier et al., 2006).

Such maltreatment or neglect puts children at risk for low levels of self-esteem and self-regulation, poor peer relations, and developmental and cognitive delays (for a review, see Aber, Allen, Carlson, & Cicchetti, 1989; Cicchetti, 2013; Dozier et al., 2006; Schwartz & Davis, 2006). They may develop disorganized or disoriented attachment; this is apparent when a young child displays no clear strategy for responding to his or her caregiver. Main and Hesse (1990) originally hypothesized that disorganized infant attachment behavior arises when the infant regards the attachment figure as frightening, and Bakermans-Kranenburg and colleagues (2005) confirmed this with a meta-analysis. The risk factors associated with the development of this type of insecure attachment include relational trauma, such as child abuse, neglect, and extremely inconsistent caretaking (Juffer, Bakermans- Kranenburg, & Van IJzendoorn, 2005), all elements typically present in the lives of children in RTCs. Most in this population have experienced multiple changes in caregivers which placed them even more at risk for these attachment-related issues (Brady & Caraway, 2002; Svanberg, 1998).

In their meta-analysis on disorganized attachment, Bakermans-Kranenburg et al. (2005) demonstrated how this type of insecure attachment is predictive of problematic stress management, an elevated risk of externalizing behavior problems, lower emotional health at school age, and dissociation in adolescence. Further, Pearlman (2003) posited that relational trauma poses challenges to healthy perceptions of both the self (e.g., I am a good person) and others (e.g., I can depend on others to help me when necessary). Thus, unhealthy or negative perceptions of the self (e.g., I am a terrible person) and others (e.g., No one can be trusted) may have serious implications for an individual's ability to form positive relationships with others, such as teachers.

Student-Teacher Relationships

Literature examining student-teacher relationships consistently points to a positive association between good student-teacher relationships and students' academic, social-emotional , and mental health outcomes (Demaray & Malecki, 2002; Hamre & Pianta, 2001 ; Reddy, Rhodes, &

Mulhall, 2003). This has been demonstrated in both regular and special education classes in community settings throughout the developmental stages. For example, children's relationships with their kindergarten teachers predict grades and standardized-test scores through fourth grade, and positive student-teacher relationships are associated with fewer disciplinary actions and increased work habits through middle school (Hamre & Pianta, 2001). In middle school, students' perceived teacher support has corresponded to increases in self-esteem and decreases in depressive symptoms (Reddy et al., 2003), and teachers' ratings of relationship quality has been linked to student risky behavior (Rudasill, Reio, Stipanovic, & Taylor, 2010). In high school, feelings of relatedness with teachers are associated with positive school attitudes, including motivation, success expectations, and interest in school (Roeser, Eccles, & Sameroff, 1998; Wentzel et al., 2010), as well as improved achievement and self-esteem (Martin, Marsh, McInerny, Green, & Dowson, 2007) and fewer depressive symptoms (Pössel et al., 2013).

More germane to this study, students at risk for academic, social-emotional, or mental health difficulties may particularly gain from positive student-teacher relationships (J. A. Baker, 2006; Furrer & Skinner, 2003; Niehaus, Rudasill , & Rakes, 2012). For elementary students with significant behavioral problems, teacher relationships characterized by warmth, trust, and low degrees of conflict were associated with positive school outcomes such as improved behavior in the classroom and improved social development (A. J. L. Baker, Archer, & Curtis, 2005). A. J. L. Baker and her colleagues (2005) suggested that during this period, teachers may act as compensatory resources for vulnerable children by providing emotional security. It is noted, however, that in some studies of aggressive children, teacher-child conflict is more predictive of negative future outcomes than teacher-child closeness is of positive future outcomes (Hamre & Pianta, 2001; Henricsson & Rydell, 2004). It follows that teachers, because of their ability to formulate transformative relationships with students, can contribute positively to treatment of individuals in residential treatment. Indeed, Dods's (2013) study of youth who had experienced trauma revealed that perceptions of teacher support at school were critical to adolescents' well-being. At the same time, many educators report that children with disordered attachment are

> disrespectful, argumentative toward authority figures, appear to have no empathy, lack academic motivation, have severe attention problems, have violent emotional outbursts, do not bond with teachers or form close attachments with friends, typically do not respond well to counseling, and have behaviors that seem resistant to the best behavior management programs. (Shaw & Paez, 2007, p. 69)

Thus, a key purpose of this study is to understand the student-teacher relationship in the context of RTCs with the idea that such knowledge may inform interventions aimed at helping adolescents heal from relational trauma experiences.

The Present Study

For adolescents in residential care, teachers are adults with whom they spend a lot of time on a consistent, long-term basis. Taken together with the positive outcomes for students evident in the vast research on student-teacher relationships in other populations, there is a clear need to investigate the dynamics and significance of the student-teacher relationship within residential treatment for traumatized adolescents. It is important to account for student gender in such investiga-

tions, because research in student-teacher relationship quality consistently shows that girls have more positive relationships with teachers than boys, based on both teacher and student report (e.g., Ewing & Taylor, 2009). In this study, male and female adolescents enrolled in RTC schools were asked to report on their perceptions of self and others and the quality of their relationship with a teacher. We examined the extent to which students' perceptions of the self and others were associated with their assessments of the quality of their relationships with their teachers and whether this association is moderated by student gender.

Method

Participants

Participants for this study were adolescent students (*N*= 113) and their teachers (*N*= 13) in two single-sex RTCs located in the southeastern United States. Students in the RTC schools participated in the data collection as part of a larger study. Eight of these students did not complete one or both of the instruments presented in this study. There were nearly equal numbers of boys and girls (55 boys, 58 girls). The majority of the sample was White (n=71); 16 identified as Black or African American; 5 identified as other; and 21 did not identify their race. Students were distributed across middle and high school grades as follows: 5 in fifth grade, 10 in sixth grade, 12 in seventh grade, 16 in eighth grade, 15 in ninth grade, 16 in 10th grade, 12 in 11th grade, and 8 in 12th grade. Twenty-two students did not identify their current grade. Approximately 70% of students had an identified disability (e.g., emotional or behavioral disorder, autism, learning disability).

Measures

Your Relationship with This Teacher (RWT)-10 items. Student perceptions of the quality of their relationships with their first-period teachers were assessed with RWT, a 10-item instrument adapted from three different measures (Gregory & Weinstein, 2008; Roeser, Eccles, & Sameroff, 1998; Skinner & Belmont, 1993) and designed to assess secondary students' perceptions of the quality of their relationship with a specific teacher. For purposes of the study, this measure was modified to be administered in a large group format. To be very clear about the teacher to whom the student was referring, the phrase *my first period teacher* was substituted for *this teacher* in the items prior to administration. Items related to perceptions of trust were developed by Gregory and Weinstein (2008), who reported a Cronbach's alpha of .91. Trust-related items include, "This teacher never listens to my side." Items related to respect and affection were developed by Skinner and Belmont (1993) who reported a Cronbach's alpha of .79. These items consist of "This teacher likes me," and "This teacher really cares about me." Items measuring trust, respect, and affection were scored on a Likert scale from 1 = *not at all true* to 4 = *very true.* Last, items related to differential attention were developed by Roeser and colleagues (1998) who reported Cronbach's alphas ranging from .70 to .84. These items include, "This teacher thinks I am less smart than I am because of my race." These items were scored on a Likert scale from 1 = *almost never* to 5 = *almost always.* This measure is also being used as part of the My Teaching Partner-Secondary research and development program (Allen, Pianta, Gregory, Mikami, & Lun, 2011) that was still under development at the time of this study.

Thus, we conducted a principal components analyses (PCA) with the RWT using Varimax rotation. There were three components with eigenvalues > 1, and the scree plot indicated there were two components. We followed this with a parallel analysis (B. P. O'Connor, 2000) where we applied PCA to 1000 sets of random data. This is a more stringent method than the eigenvalue > 1 criterion for determining the number of components to keep. Parallel analysis with 1,000 sets of random data set to sample size of 113 and 10 variables supported no more than two components. We conducted a follow-up PCA with two components forced. The resulting rotated component matrix showed a logical structure, such that one component had items associated with positive perceptions of the RWT, and the other had items indicative of negative perceptions. Any items with loadings < .4, double-loadings over .4 each, or double-loadings with a difference less than .2 were deleted (see Thompson, 2004, for criteria used to retain items), resulting in the loss of one item.

The resulting two components were named positive RWT and negative RWT. Positive RWT had five items *(a* = .754), such as "This teacher likes me," and "This teacher doesn't listen to my opinion" (reversed). Negative RWT had four items *(a* = .779), such as "This teacher doesn't seem to enjoy having me in class," and ''This teacher grades me more harshly than other students." Loadings were relatively high on both components, ranging from .548 to .827 for positive RWT and from .478 to .873 for negative RWT. The distribution of scores on the positive and negative RWT suggested that students were much more likely to report positive than negative perceptions of their relationships. Skewness and kurtosis were examined, and these indicated that scores for positive RWT could be considered normally distributed (skewness = -1.14, kurtosis = 1.053), but scores for negative RWT had a non normal distribution (skewness = 2.41, kurtosis = 5.52; Curran, West, & Finch, 1996). Thus, only scores from the five-item positive RWT were used in these analyses.

Trauma and Attachment Belief Scale (TABS) - 84 items. The TABS (Pearlman, 2003), formerly known as the Traumatic Stress Institute Belief Scale, is based in constructivist self-development theory. It consists of 84 items designed to assess the disruptions in cognitive schemas within the five areas of psychological need that are vulnerable to disruption by traumatic life experiences: safety, trust, esteem, control, and intimacy. Using a score based on a Likert scale (1 = *disagree strongly,* 6 = *agree strongly),* the TABS yields a total score, as well as 10 subscale scores, which measure each of the five psychological need areas in relation to the *self* and *other* (i.e., self-safety and other-safety, self-trust and other-trust, etc.). The scale is a useful tool to identify psychological themes in trauma material, as well as interpersonal and intrapersonal themes that are likely to emerge in treatment. It is also designed to monitor progress and change in treatment.

Normative data were collected for the scale with both clinical and nonclinical samples, for adult and adolescent populations. In the nonclinical sample, an internal consistency estimate of .96 and test-retest correlation of .75 for a 1-2 week interval were obtained (Pearlman, 2003). Patterns of intercorrelations between the TABS and the Trauma Symptom Inventory (Briere, 1995) support the construct validity of the TABS (Pearlman, 2003). Scores for outpatients with a history of childhood abuse were highest when compared to scores for battered women and homeless women with mental illness, and TABS scores are higher overall for outpatients with a history of traumatic life experiences than for outpatients in general (Dutton, Burghardt, Perrin,

Chrestman, & Halle, 1994; Goodman & Dutton, 1996; Pearlman, 2003), demonstrating criterion related validity.

Because the hypothesized scales of the TABS have not been empirically studied, we conducted a PCA to examine the structure of students' scores on the TABS. We used Varimax rotation; the scree plot indicated there were three components, and 21 components with eigenvalues > 1 emerged. We followed this with a parallel analysis (B. P. O'Connor, 2000) in which we applied PCA to 1000 sets of random data. Parallel analysis indicated that no more than three components would emerge from the data. Because this aligned with the number of components suggested from the scree plot, we conducted a PCA with three components forced; loadings from the rotated component matrix suggested the three-component structure was tenable. We eliminated items with loadings < .4, double-loadings over .4 each, or double-loadings with a difference less than .2 (see Thompson, 2004, for criteria used to retain items). Internal consistencies were high at .92 for components 1 and 2, and .88 for component 3. These components were used in path analyses as predictors of student-teacher relationship quality. Loadings for the retained items ranged from .476 to .696 for component 1, .472 to .678 for component 2, and .575 to .766 for component 3. The first component, negative perception of others (Cronbach's a = .916), was conceptualized as a dimension representing a lack of trust and safety, or feeling in constant danger. It included items such as "I fee l like people are hurting me all the time," "Most people ruin what they care about," and "I never think anyone is safe from danger." The second component, negative perception of self (Cronbach's a= .881) represented feelings of being bad and unlikeable. It included items such as "I have physically hurt people," "If people really knew me, they wouldn't like me," and "To feel okay, I need to be in charge." The third component, positive perception (Cronbach's a= .922) represented a general feeling of acceptance and trust. Unlike the negative perception components, positive perception included feelings related to both the self and others. Items such as "I feel good about myself most days," "When my feelings are hurt, I can make myself feel better," and "Some of my happiest times are with other people" make up this component.

Procedure

As part of a larger, longitudinal study to examine the effectiveness of a school intervention, surveys were administered to students. Prior to data collection, Institutional Review Board approval from the state and the university for the protected adolescent population was obtained. Data for the effectiveness study were collected at multiple time points (before and after the intervention), but only data from the first time point (prior to the implementation of the intervention) were used in this study. Data collection was completed by university faculty researchers and graduate research assistants with the assistance of direct-care staff from the residential treatment facility. Standardized instruction was provided to the participants at each time point of data collection.

Analytical Plan

Analyses were conducted using Amos 20 software, with full-information maximum likelihood estimation to accommodate missing data. As suggested by Hu and Bentler (1999) and Marsh, Hau, and Wen (2004), multiple goodness-of-fit indices were used. In addition to the

chi-square model fit statistic (nonsignificance suggests good fit), we used the Incremental Fit Index (IFI; values close to 1 suggest good fit), the Tucker-Lewis Index (TLI; values close to 1 suggest good fit), the Comparative Fit Index (CFI; values close to 1 suggest good fit), and the Root Mean Square Error of Approximation (RMSEA; values close to 0 suggest good fit; Byrne, 2001).

First, positive RWT was regressed on negative perception of others, negative perception of self, positive perception, and sex, using path analysis. Correlations were estimated between negative perception of others, negative perception of self, and positive perception. Second, each interaction term (e.g., negative perception of others x sex) was added to the model separately to manage multicollinearity problems. In each model, correlations were estimated between the interaction term and all main effects. Fit indexes were examined to determine the fit of the models to the data.

Results

Descriptive Analyses

Means, standard deviations, and correlations were calculated for scores on the three TABS (i.e., negative perception of others, negative perception of self, positive perception) and the positive RWT scores, first together, then separately by sex. For the whole sample, means for negative perception of others, negative perception of self, and positive perception were 3.17 *(SD* = 0.99), 3.26 *(SD* = 1.05), and 4.45 *(SD* = 0.88) , respectively. The possible range of scores was 1 to 6 where a higher score indicated greater endorsement of the scale. The mean score for positive RWT was 3.33 (on a scale of 1 to 4 where a higher score indicated a more positive RWT), with a standard deviation of 0.65. Negative perception of others and negative perception of self were positively correlated *(r* = .623, $p < .01$). Positive perception was positively related to positive RWT *(r* = .303, $p < .01$). All other intercorrelations were nonsignificant.

For boys, means for negative perception of others, negative perception of self, and positive perception were 3.23 *(SD* = 0.92), 3.36 *(SD* = 1.11), and 4.55 *(SD* = 0.85), respectively. The mean score for positive RWT was 3.32, with a standard deviation of 0.50. Negative perception of others and negative perception of self were positively correlated *(r* = .629, $p < .01$). Positive perception was positively related to positive RWT *(r* = .362, $p < .01$). All other intercorrelations were nonsignificant.

For girls, means for negative perception of others, negative perception of self, and positive perception were 3.12 *(SD* = 1.05), 3.17 *(SD* = 0.98), and 4.36 *(SD* = 0.91), respectively. The mean score for positive RWT was 3.34, with a standard deviation of 0.77. Similar to correlations for boys, negative perception of others and negative perception of self were positively correlated *(r*= .622, $p < .01$). Also, positive perception was positively related to positive RWT *(r* = .283, $p < .05$). However, in contrast with correlations for boys, negative perception of others was negatively correlated with positive perception *(r* = –.278, $p < .05$). Negative perception of self was negatively correlated with positive RWT *(r* = –.304, $p < .05$), and negative perception of self was negatively correlated with positive perception *(r* = –.275, $p < .05$). The correlation between negative perception of others and positive RWT was nonsignificant.

Path Analyses

Main effects model. The main effects model is displayed in Figure 1. Fit indexes suggest the model fit the data well, χ^2_3 = 2.555 (p = .466), IFI = 1.00, TLI = 1.00, CFI = 1.00, and RMSEA = .00. Controlling for student sex, which was not significantly related to perceptions of positive RWT (β = .037, p = .680), negative perception of self and positive perception were significantly associated with positive RWT (β = - .231, p = .046 and β = .295, p = .001, respectively). Negative perception of others was not significantly related to positive RWT (β= .158, p = .171). The model accounted for 13% of the variance in positive RWT.

Moderation models. Interaction terms (i.e., negative perception of others x sex, negative perception of self x sex, positive perception x sex) were entered in separate models to manage multicollinearity problems. The first model contained an interaction between negative perception of others and sex. The model fit the data well, χ^2_3 = 2.554 (p = .466), IFI = 1.00, TLI = 1.00, CFI = 1.00, and RMSEA = .00, but accounted for only .01 % additional variance in positive RWT. The interaction term was not significantly related to positive RWT (β = - .116, p = .786). The second model included the interaction between negative perception of self and sex. Again, the model fit the data well, χ^2_3 = 2.555 (p = .466), IFI = 1.00, TLI = 1.00, CFI = 1.00, and RMSEA = .00. The model accounted for 4% additional variance in positive RWT (above and beyond variance explained by the main effects only model), and the interaction term was significantly associated with positive RWT (β = - .689, p = .019). In addition, sex was significantly related to positive RWT (β = .513, p

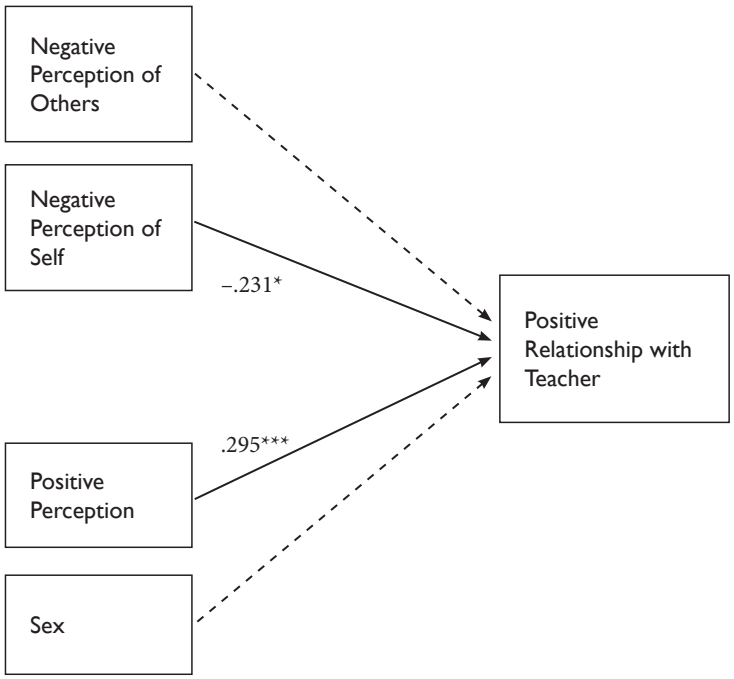

Figure 1. Main effects model with student perceptions of self and others and student sex predicting assessments of their relationships with teachers. *p < .05. ***p < .001.

= .021). However, the main effect of negative perception of self was no longer significantly associated with positive RWT (β = .218, *p* = .329), suggesting that this association only exists for girls. Finally, the third model included the interaction between positive perception and sex. The model fit the data well, χ^2_3 = 2.555 (p = .466), IFI = 1.00, TLI = 1.00, CFI = 1.00, and RMSEA = .00, but did not explain any additional variance in positive RWT and the interaction term was not significantly related to positive RWT (β= .080, *p* = .885).

Discussion

Two main findings emerged from this study. First, students' perceptions of the self and others were associated with their assessments of their relationships with their teachers. Specifically, in this study, students with higher negative self-perceptions reported less positive relationships with teachers, and students with higher positive perceptions (of both the self and others) reported more positive relationships with teachers. In fact, students' perceptions of the self and others accounted for 13% of the variance in their perceptions of positive relationships with teachers. Second, the association between negative self-perception and positive relationships with teachers was present only for girls. Each of these findings will be discussed below.

Male and female students in RTCs in this study who reported more positive perceptions were also more likely to report positive relationships with teachers. This finding is congruent with research showing that a relational trauma history has ramifications for an individual's ability to successfully form relationships with teachers and others (Kennedy & Kennedy, 2004; Schwartz & Davis, 2006). Bowlby's (1969) internal working model suggests that experiences of abuse or trauma by important others may lead an individual to view others negatively. This makes sense in light of Pianta's (1999) conceptualization of the student-teacher relationship as similar to, and stemming from, the parent-child relationship. As with secure attachment, children with positive relationships with teachers view them as a source of safety and support, and thus forge close bonds that mimic those in a healthy parent-child relationship. Children with poor or disorganized attachment, on the other hand, do not perceive teachers this way, and are likely to have negative relationships with teachers. Taken together, then, an individual's ability to form positive relationships with teachers is tied to his or her attachment experiences, such that a history of relational trauma would decrease an individual's likelihood of developing positive relationships with teachers. Results from this study suggest that this may be true, in that students reporting more positive self-perceptions were also more likely to have positive views of their relationships with teachers.

It could also be that the link found here between perceptions of self and others and relationship quality with teachers is grounded in characteristics of the student. This is congruent with work linking personality characteristics to social behavior and academic outcomes. For example, Graziano, Jensen-Campbell, and Hair (1996) found that adolescents lower in agreeableness, a positive personality trait, were less likely to choose negotiation, and more likely to choose power assertive methods, when dealing with conflicts. Similarly, Hair and Graziano's (2003) study of personality and achievement in middle and high school showed that higher levels of openness and agreeableness in middle grades were predictive of better academic and behavioral adjustment in high school. In a sample of college students, agreeableness was related to perceptions of school satisfaction (Eschleman & Burns, 2012). Although this study was not an examination

of personality characteristics, trauma symptomology was measured via student perception, suggesting a partial contribution of individuals' dispositional characteristics. Indeed, this finding is also consistent with research on child predictors of teacher-child relationship quality, showing that children's aggression and withdrawal are associated with poorer relationships with teachers (Doumen et al., 2008; Eisenhower, Baker, & Blacher, 2007; Ladd & Burgess, 1999). Findings from the Doumen et al. (2008) study with kindergarten children suggest that teacher-child conflict and aggression are reciprocally related. There is also evidence that children low in self-regulation and high in anger and frustration have more conflict and less closeness in relationships with teachers in middle school (reported by teachers; Rudasill et al., 2010). To the extent that perceptions of trauma symptomology reflect negative affect and difficulties with regulation (Kennedy & Kennedy, 2004; Schore, 2001), this study supports the notion that some children may be more likely to assess relationships with teachers negatively.

Negative perceptions of self were associated with less positive relationships with teachers for female participants, but not for male participants. This finding contradicts other research showing support for sex differences in student-teacher relationship quality, with girls traditionally rating teachers as more supportive than boys, and reporting more positive relationships with their teachers (Furrer & Skinner, 2003; Niehaus et al., 2012; Rueger, Malecki, & Demaray, 2010; Wentzel, Battle, Russell, & Looney, 2010). Similarly, research supports the idea that teachers tend to perceive their relationships with girls as more positive (i.e., less conflict, more closeness) than their relationships with boys (e.g., Ewing & Taylor, 2009; Hamre & Pianta, 2001). Although women and girls, in general, tend to seek intimate connections with other people (Collins & Steinberg, 2006), this desire for connection may render girls who have experienced trauma more vulnerable to the effects of relational trauma, resulting in more negative outcomes than for boys, such as poorer relationships with teachers. In their review of research on gender differences in friendships, Collins and Steinberg (2006) noted that this vulnerability may explain adolescent girls' increased likelihood of depression in the face of relational hardships, such as the loss of a friendship. Extended to the findings reported here, it is possible that girls' experiences with relational trauma manifest as more negative feelings about relationships with teachers, whereas boys' feelings about relationships with teachers may be unaffected.

Limitations

This study provides a unique view into the school lives of youth in RTCs, a sorely understudied group of students. It also illuminates the mechanisms of positive student-teacher relationship formation among these students who have relational trauma histories, suggesting that more positive perceptions of the world and self may be beneficial for positive relationship development, and that girls may be particularly vulnerable to less positive relationships with teachers if they have negative perceptions of self. Even so, several limitations to this study should be considered. First, although full information maximum likelihood estimation methods were used to accommodate missing data (Enders & Bandalos, 2001), there is no way to know the extent to which students were truthful in reporting their perceptions of the self and others and relationships with teachers. A second, and related, issue is this study's reliance solely on student report. Although this study examines students' perceptions, future studies should include teacher and observer data to provide a more complete picture of students' experiences. Similarly, we do not know the extent to which

teacher and student characteristics, such as teacher training or student special education status, contributed to students' perceptions of relationships with teachers. Third, students in this study attended two single-sex schools; thus, findings may not be generalizable to students in co-ed RTC schools or in different RTC schools. Indeed, the sex effects found in this study may actually be artifacts of the different schools students attended, rather than actual variations due to sex. Ideally, future work should include studies of students in multiple RTC schools to gauge these findings with a broader sample. Finally, the cross-sectional, nonexperimental nature of this study precludes us from making any causal inferences from the findings reported here.

Implications for Practice

Relational trauma is a complicated issue and adolescence is a challenging stage of development (Giovacchini, 2001; Kalke, Glanton, & Cristalli, 2007; Novick & Novick, 2001). Treating adolescents who have experienced early childhood abuse and neglect and been subsequently removed from their family. home, school, and community many times adds layers of complexity (Giovacchini, 2001). Thus, the population of students in RTCs across the country is only beginning to be empirically investigated even though these issues have been regarded as critical for decades. The knowledge we do have about the important role a teacher can play in a student's life must be applied to this vulnerable population. Teachers are in a unique and important position to provide a stable, consistent, and supportive adult relationship for developing adolescents who have lacked this experience and desperately need it (Dods, 2013). Teachers who understand the effects of trauma on learning, who are able to develop practices to help them effectively teach students in RTCs, and "who are able to participate actively and collaboratively in the systems designed to support traumatized children will not only improve their educational outcomes but will assist in their healing and recovery" (Downey, 2007, p. iv).

Research on training teachers who work in RTCs is scant and only a few studies have examined the role of positive interventions with this population (Pisacreta, Tincani, Connell, & Axelrod, 2011). Therefore, a clear implication from this research is to provide professional development for teachers in RTCs involving three points. First, training should include information about relational trauma and its implications for relationship building. Second, training should emphasize the protective role of positive relationships with teachers for students' academic, social-emotional, and mental well being. Finally, teachers should be taught how to foster positive relationships with students, particularly those who are vulnerable to relationship difficulties. Recent work suggests that explicit instruction on positive teacher-child interactions may help teachers. In a randomized control trial, a 14-week course for preschool teachers on fostering high quality teacher-student interactions improved teachers' ability to identify effective teacher-child interactions and increased teachers' use of effective interactions (Hamre et al., 2012), and evidence suggests that this type of teacher instruction leads to improved academic outcomes for students in high school (Allen et al., 2011). We currently understand very little about the experiences of students in RTC schools, so it is critical to use knowledge about fostering positive relationships with students in typical schools as a starting point, while referencing the unique characteristics of students in RTCs.

These findings also have implications for other professionals who work with students in RTCs, such as social workers, and for teachers who are not working in RTC schools but may have stu-

dents with trauma histories. Indeed, it is important for professionals who provide services to youth to be aware of behaviors indicative of trauma (i.e., have a "trauma lens," Tishelman et al., 2010, p. 17), so that resources (time, money, effort) can be directed effectively and result in the best possible outcomes.

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