

Predicting peer acceptance and peer rejection for autistic children

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Funding information

Institute of Education Sciences, Grant/Award Number: R324A1100836; SEARCH Family Autism Resource Center

Abstract

Autistic students often experience peer relationship difficulties. As peer acceptance and rejection may be malleable over time, we examined predictors of change in peer acceptance and peer rejection among early elementary-age autistic students. We followed 166 autistic children (mean age: 6.1 years [range: 4–8], 82.5% boys, grades preK-2nd) longitudinally across 2 school years. Social skills, internalizing problems, and externalizing behaviors were considered as predictors of change in teacher-rated peer acceptance and rejection, covarying IQ and autism characteristics. Autistic children experienced high rejection and low acceptance; 51.9% of children were rejected by peers in one or both school years. Results revealed distinct predictors for peer acceptance versus rejection: social skills predicted change in peer acceptance across school years, whereas externalizing problems predicted change in peer rejection. Internalizing problems did not predict change in either construct. Findings can assist school professionals in supporting social acceptance and acceptance for young autistic students.

KEYWORDS

autism, externalizing behaviors, peer rejection, peer relationships, social acceptance, social inclusion, social skills, teacher-report

Practitioner points

- The quality of autistic student's relationships with their peers fluctuates across time. With an understanding of

the factors that uniquely influence peer acceptance and peer rejection, practitioners can identify targets for intervention to support autistic students development of positive peer relationships.

- An autistic student's externalizing problems play an important role in the rejection they experience from peers over time, such that autistic students with increasing externalizing behaviors are more likely to experience teasing and difficulty getting along with their peers.
- On the other hand, autistic students' social skills were the primary factor related to peer acceptance, suggesting that autistic students with improved social skills are better positioned to engage as an integrated, included member of the peer group.

1 | INTRODUCTION

School-age children who have a diagnosis of autism spectrum disorder (ASD) frequently report difficulties in their social interactions with peers, including friendship dissatisfaction, loneliness (Zeedyk et al., 2016), and lower peer acceptance (Chamberlain et al., 2007) lower social inclusion, and greater isolation than their nonautistic peers (Robertson et al., 2003; Rotheram-Fuller et al., 2010). Differences in social communication, which are considered a hallmark of autism, can interact with the social demands of the school environment to create difficulties forming and maintaining peer relationships and can put autistic children¹ at risk for rejection by peers (Dean et al., 2014; Eroglu & Kilic, 2020; Symes & Humphrey, 2010). Children's social skills, as well as their mental health in terms of both externalizing problems and internalizing symptoms, may impact their acceptance and rejection among peers, which in turn has implications for their long-term well-being. We examine how autistic children's social skills, externalizing behaviors, and internalizing symptoms contribute to changes in their peer rejection and acceptance over time during the early elementary years.

1.2 | Peer rejection and peer acceptance

Peer rejection and peer acceptance are two related yet distinct constructs of the quality of children's relationships with peers. Peer rejection is defined as the extent to which an individual is disliked by their group of peers (Cillessen, 2009); in the current study, we examine peer rejection based on teachers' perceptions of the extent to which the child is disliked, teased, or has difficulty getting along with peers. Research conducted in general education settings, not specific to autism, has linked peer rejection to concurrent and subsequent negative academic and social-emotional outcomes (Tetzner et al., 2017; see Mulvey et al., 2017 for a review) including decreased levels of classroom participation (Buhs et al., 2006;

¹We use identity-first language ("autistic person") to reflect the preferences of many members of the autistic community (e.g., Kenny et al., 2016; see Bottema-Beutel et al., 2021 for an overview).

Ladd et al., 2008), greater anxiety (Mrug et al., 2012), conduct problems (Tung & Lee, 2018), and depression (Gooren et al., 2011).

Peer acceptance is defined as the extent to which an individual is well-liked by, and integrated with, their peers and a part of group activities (Sette et al., 2020). While peer acceptance is often assessed through sociometrics (i.e. peer nominations or ratings; Cillessen et al., 2017), here we measure peer acceptance based on teacher report of the child's and peers' behaviors toward one another. Our aim is that by examining behavioral aspects of peer acceptance, rather than peers' internal affect and cognitions (e.g., liking) toward the focal child, we are examining aspects of peer acceptance that can be more directly addressed through intervention. The concurrent and long-term benefits of peer acceptance are well-documented in education research among nonautistic or community samples; peer acceptance is predictive of improved academic performance over time (Sette et al., 2020; see Juvonen et al., 2012), gains in self-esteem over time (Gruenenfelder-Steiger et al., 2016), loneliness (Kingery et al., 2011), and long-term educational attainment (Lorijn et al., 2022).

Not only are peer acceptance and peer rejection distinct constructs—as opposed to two ends of a continuum—but the two constructs do not uniformly co-occur; indeed, the degree to which one is disliked or rejected by one's peers and the degree to which one is accepted by, integrated with, and included by one's peers do not always go hand in hand (Chiu et al., 2021). This is particularly apparent for autistic children, who may be more likely to experience peer isolation than rejection (Rotheram-Fuller et al., 2010). Given this, there may be distinct underlying factors contributing to both rejection and acceptance in early elementary-aged autistic students. Previous research examining the role of child characteristics, including social skills, externalizing behaviors, and internalizing symptoms, in shaping peer experiences suggests that these two aspects of peer experiences—peer rejection and peer acceptance—may have distinct predictors (Barzeva et al., 2019; Juvonen et al., 2019; Nyberg et al., 2008). Further, peer acceptance and peer rejection are distinct from constructs such as friendship quality—which is often based on children's self-report of the degree of companionship, validation and caring, and other quality indicators—and the number and mutuality of friends, which are often dependent on child and peer ratings (e.g., Bottema-Beutel et al., 2019; Petrina et al., 2016). While also important aspects of children's peer relationships, these constructs may differ in their predictors and consequences from the group-level classroom-wide experiences of peer rejection or peer acceptance in school.

1.3 | Peer rejection and acceptance among autistic children

Difficulties with peer relationships are common for young autistic children, including fewer mutual friendships (Mazurek & Kanne, 2010), lower social inclusion, and greater isolation than their nonautistic peers (Robertson et al., 2003; Rotheram-Fuller et al., 2010). Children's autism-related differences in social communication may interact with the school social environment, which is generally set up for nonautistic learners, to negatively affect autistic children's peer acceptance and relationships. Notably, autistic children do not consistently rate their own social experiences poorly: some studies show elevated loneliness or social dissatisfaction (Kasari et al., 2011; Zeedyk et al., 2016) and some show levels similar to those of nonautistic children (Bottema-Beutel et al., 2019; Chamberlain et al., 2007). However, with regard to teacher-reported or peer-nominated peer rejection and peer acceptance, autistic students more consistently fare worse than their nonautistic peers (Dean et al., 2014, 2017; Jones & Frederickson, 2010; Kasari et al., 2011). For instance, among 2nd–5th graders providing both peer nominations and self-reports, autistic children were less well-accepted by peers and more likely to be peripheral or secondary members of social networks relative to their nonautistic peers (Chamberlain et al., 2007). Similarly, in a study using sociometric peer nominations, early elementary-age autistic children were more likely to be socially excluded and rejected than nonautistic children (Dean et al., 2014). Further, in inclusive elementary settings, autistic students spend more time in solitary play, are less likely to be rated as a desirable partner by classmates, and are

less included in social networks relative to nonautistic students (Dean et al., 2017; Jones & Frederickson, 2010; Kasari et al., 2011). Importantly, bullying and victimization are also elevated for autistic youth (Eroglu & Kilic, 2020; Symes & Humphrey, 2010).

To date, the preponderance of research on the peer relationships of autistic children includes comparative, correlational studies documenting the relatively poor quality of relationships with peers among autistic students relative to their nonautistic peers (see Locke et al., 2017; for a review). A few studies have examined potential contributors to autistic students' social outcomes using a longitudinal design; these studies have found that child gender and classroom size (namely, poorer social integration for autistic boys in larger classrooms; Anderson et al., 2016), number of peer connections, and number of received friendships (Locke et al., 2017) predict autistic children's outcomes including social connectivity and social network salience. Few studies have investigated the underlying factors that contribute specifically to social acceptance or rejection of autistic students, and especially whether their heightened externalizing and internalizing problems impact their acceptance among peers (Romero et al., 2016). Such information could be useful to educators and school psychologists by identifying potential targets for interventions to improve peer relationships. The current study is aimed at examining three potential contributors to changes in peer rejection and peer acceptance—children's social skills, externalizing problems, and internalizing symptoms. Moreover, we argue that peer rejection and peer acceptance are distinct dimensions of children's peer relationships, which warrant distinct consideration in relation to possible predictive characteristics.

1.5 | Social skills in relation to peer acceptance and rejection

Social skills enable children's positive social interactions (Beauchamp & Anderson, 2010) and they often go hand in hand with the quality of children's peer relationships (Mostow et al., 2002). As such, social skills have long been a target of intervention in autism. For autistic children, social difficulties may include difficulties reading and understanding others' emotions (e.g., Bal et al., 2010; Lozier et al., 2014) and perspective-taking (Jahromi et al., 2021). These social and emotional difficulties may in turn have consequences for peer acceptance and rejection. However, research examining the association between autistic students' social skills and their peer acceptance or rejection outside of an intervention context is limited and correlational, precluding the examination of a directional effect of social skills on peer relationships. Social skills have been shown to predict changes in peer rejection and friendship quality among nonautistic children (Blair et al., 2015; Nyberg et al., 2008) and to relate to lower sociometric peer rejection (Jones & Frederickson, 2010) and lower loneliness (Zeedyk et al., 2016) among autistic children in cross-sectional examinations.

One study of school-age autistic children, which used peer nominations to assess rejection and acceptance, illustrates the complexity of these associations and the importance of measuring peer acceptance and rejection separately. While peer rejection was predictably associated with lower peer-rated cooperation (defined as being rated as agreeable and cooperating with others) and parent-rated behavioral adjustment, peer acceptance (based on peer nominations of how much they like to work with that classmate) was unexpectedly related to lower parent-rated scores on a broad scale of prosocial behavior. In other words, autistic children with higher prosocial behavior experienced lower social acceptance than their autistic peers with fewer prosocial behavior; the authors hypothesized that autistic students who had a higher level of skills may be afforded fewer concessions by peers (Jones & Frederickson, 2010). This complex set of findings underscores the importance of nuanced distinctions between peer relations constructs including rejection and acceptance. There is a need for research to more fully examine how distinct aspects of peer relations, including rejection and acceptance, may be differently predicted by social skills.

1.6 | Externalizing behaviors in relation to peer acceptance and rejection

Autistic students experience elevated externalizing behaviors, on average, relative to their nonautistic peers, with studies showing that anywhere from 28% to 58% have Attention Deficit Hyperactivity Disorder (ADHD; Romero et al., 2016; Simonoff et al., 2008). Clinically elevated externalizing problems, such as aggressive, noncompliance, hyperactivity, and impulsivity, are present as early as age three (Eisenhower et al., 2005) and by school age, roughly one quarter of autistic children scoring in the clinical range of parent-reported externalizing problems (21%–28%; Bauminger et al., 2010; Hartley et al., 2008; Llanes et al., 2018).

Externalizing behaviors have long been associated with difficulties in relationships with peers (Coie et al., 1990), with an especially strong association with peer rejection (e.g., Chen et al., 2015) among nonautistic and community samples. In a meta-analysis of child- and adolescent-focused studies, physical aggression was associated with both peer acceptance and peer rejection, with stronger link to peer rejection than to acceptance (Card et al., 2008). In addition, among kindergarteners, teacher-reported antisocial behavior (which included behaviors such as fighting, lying, and destroying property) and hyperactivity (including restlessness, low concentration, distractibility) have been linked to greater rejection and lower acceptance based on peer nominations (Brendgen et al., 2001). Externalizing problems may impact peer rejection via multiple mechanisms. First, externalizing behaviors such as aggression or noncompliance may deter peers from gravitating toward the focal child (Ekornås et al., 2011). Second, externalizing behaviors, and the closer teacher-student contact that these behaviors may elicit, may usurp opportunities for the focal child to engage socially with peers. Third, given that teachers have more strained, negative interactions with children who have externalizing problems (Doumen et al., 2008), teachers' behaviors toward the focal child may serve to shape peers' opinions of the child via social referencing (Endedijk et al., 2021; Runions, 2014).

Autistic students may be especially at risk for peer rejection and low acceptance as they demonstrate markedly elevated rates of behavior problems in comparison to their nonautistic peers (e.g., Totsika et al., 2011). In the limited studies to date examining the relation between externalizing behaviors and the quality of peer relationships specifically among autistic students, the quality of autistic students' peer relationships was associated with externalizing problems. Specifically, among autistic 6–7 years olds, externalizing problems on the Teacher Report Form (Achenbach & Rescorla, 2001)—which includes aggression, noncompliance, tantrums, destruction of property, and rule-breaking—are associated with greater rejection based on peer nominations (Sari et al., 2021). In one study of school-age autistic children, hyperactivity was linked to higher peer sociometric rejection (Jones & Frederickson, 2010), while another study of autistic children in general education settings had more mixed findings: inattention, but not hyperactivity/impulsivity and oppositional/defiant behavior, was negatively associated with rejection (Robertson et al., 2003).

These autism-specific studies were correlational, precluding the ability to determine whether externalizing problems predict change in peer acceptance or rejection over time. However, studies of nonautistic children or community samples that utilize longitudinal designs support a link between earlier externalizing behaviors and later increases in peer rejection over time (Lansford et al., 2010; Panak & Garber, 1992; Sturaro et al., 2011), as well as in physical and relational peer victimization over time (Sukhawathanakul & Leadbeater, 2020). Further, when externalizing problems are considered alongside social skills, externalizing problems appears to be the stronger predictor of peer rejection (Nyberg et al., 2008), whereas social skills appear to more strongly predict peer acceptance (Beazidou & Botsoglou, 2016).

1.7 | Internalizing symptoms in relation to peer acceptance and rejection

Autistic students experience higher rates of internalizing symptoms than their nonautistic peers, including both anxiety and depressive symptoms (Bauminger et al., 2010; Hallett et al., 2010; Kim et al., 2000). Indeed, compared

to 8% of nonautistic youth, 69% of autistic youth meet criteria for clinically-significant anxiety (Kerns et al., 2021). A meta-analysis of autistic children found that 40% had at least one co-occurring anxiety disorder that met diagnostic criteria (Van Steensel et al., 2011); similarly, Simonoff and colleagues (2008) found 42% of school-age autistic children to have at least one anxiety disorder in a population-based sample, with social anxiety disorder the most common at 29%. Clinically elevated rates of anxiety also appear to increase across the early school years, with 20% of preschoolers (ages 4–5) and 28% of early elementary schoolers (ages 6–7) showing parent-reported anxiety symptoms in the clinical range (Llanes et al., 2018). Cross-lagged, longitudinal analyses of children across ages 7–12 years also indicate that early autism characteristics predict increases in anxiety and depression over time (Hallett et al., 2010). Early autism characteristics, in the context of a social and physical environment that is primarily set up for nonautistic needs and communication styles, may foster or exacerbate the early emergence of anxiety or stress for autistic children (Hallett et al., 2010).

In community samples, longitudinal research shows more support for a model in which peer rejection leads to an increase in internalizing symptoms and less support for a model in which internalizing symptoms predict later rejection (e.g., Panak & Garber, 1992). Internalizing symptoms may negatively impact peer acceptance via multiple mechanisms. First, internalizing symptoms may interfere with peer relationships by making children less likely to engage in proactive social behaviors, respond positively to peer initiations, to initiate social overtures, skill areas which are already more difficult for autistic children. Symptoms such as withdrawal, hopelessness, low persistence, or social avoidance may lead children to avoid social interactions in the first place; other symptoms such as fear of evaluation, negative thoughts, or self-defeating beliefs may interfere with persistence in these social interactions (Coplan & Arbeau, 2008; Ladd et al., 2011). Finally, children's perceptions of anxiety or depression in their peers may impact acceptance; in an experimental paradigm with 3rd–6th grade children, children who viewed video vignettes of depressed peers rated the peers as less likeable and less prosocial those children who viewed nondepressed peers (Peterson et al., 1985). Among autistic students, internalizing symptoms are positively associated with peer rejection (Jones & Frederickson, 2010; Mazurek & Kanne, 2010; Wright & Wachs, 2019) just as they are for nonautistic students (e.g., DeRosier et al., 1994; Prinstein & Aikins, 2004). However, the research among autistic students has been correlational and does not shed light on whether pre-existing internalizing symptoms affect the development of later peer relationships or vice versa. In all, while correlational research has shown negative associations between internalizing symptoms and the quality of children's peer relationships, little is known about how the presence of internalizing symptoms may predict or impact change in the peer acceptance or rejection of autistic children over time.

1.8 | Other child factors predicting peer relationships

In addition to social skills and behavioral difficulties, less malleable factors are also known to impact the peer relationships of autistic children. Performance on assessments of intellectual ability has been positively associated with the quality of children's peer relationships for autistic and nonautistic children (Bauminger-Zviely & Agam-Ben-Artzi, 2014; Bellanti & Bierman, 2000; Mazurek & Kanne, 2010). Similarly, children with greater autism characteristics are typically less involved in peer social networks (Jones et al., 2017; Locke et al., 2017). In the current study we consider cognitive ability and degree of autism characteristics as covariates.

1.9 | The present study

Autistic students are at elevated risk of negative social outcomes. To guide school psychologists' ability to address these concerns and best serve these students, researchers must identify the underlying factors that contribute to peer relationship experiences, to identify students at risk and to inform intervention efforts. In this study we

intentionally distinguish between peer rejection and peer acceptance, two distinct aspects of relationships with peers that may be predicted by different factors and which have different implications for adjustment. Using a longitudinal design across 2 school years, we examined rates of peer rejection and acceptance over time. We also examined the extent to which child characteristics—including social skills, externalizing behaviors, and internalizing symptoms during the second school year—predicted changes over time in both peer rejection and peer acceptance for early elementary-aged autistic students. To examine the power of social, emotional, and behavioral functioning during the current school year to drive change in social outcomes relative to prior years, we examine the role of concurrent social skills, internalizing problems, and externalizing problems in predicting changes in acceptance and rejection from 1 year to the next.

2 | METHODS

2.1 | Procedures

As part of a larger longitudinal study examining the adaptation to early schooling among young autistic children (see Losh et al., 2022 for overview), participants were recruited through in-print and online advertisements, state-funded developmental services centers, clinics, school districts, and autism support groups and websites. Eligible children were ages 4–7 years and in grades Pre-K to 2nd grade at enrollment. Children who had previously received a formal diagnosis of ASD were eligible if they scored in the autism or spectrum range on the ADOS revised algorithms, met clinical criteria based on the judgment of graduate-level clinicians, and earned an Estimated Full-Scale IQ of ≥ 50 on the WPPSI-III. If children did not have a prior diagnosis of ASD, the Autism Diagnostic Interview—Revised (ADI-R; Le Couteur et al., 2003) was also administered to the parent.

Child IQ and autism characteristics were assessed during initial eligibility sessions in the fall of the school year; subsequent data were obtained through teacher-report questionnaires in the spring (late March through June) of the same school year (Year 1) and the winter (January–February) of the following school year (Year 2); an average of 10 months elapsed between Years 1 and 2 assessments. At each time point, both parents and teachers received a modest honorarium for participation. The vast majority of teachers (97.6%) were different at the two time points. Approval from our universities' Institutional Review Boards was attained along with informed consent from families and teachers.

2.2 | Participants

Participants were 166 autistic children in Southern California ($N = 105$) and Massachusetts ($N = 61$); these children represent all participants in the larger study whose teachers provided data in Years 1 and/or 2. Children (82.5% boys) were ages 4–8 years ($M = 6$ years, 1 month) at the Year 1 assessment and ages 5–9 years at the Year 2 assessment ($M = 6$ years, 11 months). Children attended preschool (34.9%), kindergarten (33.1%), 1st grade (24.7%), or 2nd grade (7.2%) at Year 1; 92.2% attended public schools (vs. private or parochial schools, including private preschools). More than half (54.7%) of children spent at least 50% of their day in general education classrooms versus special education. One-quarter of children (25.8%) had one or more additional psychological diagnoses besides autism (17.2% had one and 8.6% had 2–3 additional diagnoses), most commonly ADHD (9.2% of the sample) or a speech or language disorder (9.1%). One parent from each family (88.6% female) completed surveys; most parents were married (81.3%) or cohabiting (8.4%), and 63.9% had at least a 4-year college degree. Race was assessed with an open-ended, parent-report item later aggregated into categories: children were 6.6% Asian-American, 19.3% bi- or multiracial, 4.2% Black or African-American, 10.2% Latinx, 3.6% other races, and 55.4% White; 0.6% did not provide race.

Teacher participants (Year 1: $N = 154$; Year 2: $N = 126$) were 89.8% female with an average of 13.7 years of teaching experience (range: <1–44 years); 68.5% had a Master's degree; 54.9% were general education teachers

versus 45.1% special education teachers. 25.7% of teachers, including 7.6% of general education teachers and 44.6% of special education teachers, had at least some professional training in autism. Teachers reported their race in response to a multiple-choice item as Asian (4.9%), Black or African American (3.4%), Latinx (12.4%), Native American or Alaska Native (0.8%), other races (4.1%), and White (73.1%); the remaining 1.4% did not provide race.

2.3 | Measures

2.3.1 | Autism characteristics and confirmation of autism diagnosis

During initial eligibility sessions, we evaluated children's autism characteristics via the *Autism Diagnostic Observation Schedule* (ADOS; Lord et al., 2000) a semi-structured, interactive, clinician-delivered assessment that is considered the gold standard for autism diagnosis in both research and clinical settings (Hurwitz & Yirmiya, 2014). Clinicians used revised algorithms (Gotham et al., 2007, 2008), which are reflective of DSM criteria for ASD and provide strong predictive validity as well as comparability across modules (Gotham et al., 2008). Children with scores in the autism or spectrum range qualified for the study; scores were also covaried in our analyses as an indicator of autism characteristics.

2.3.2 | Intellectual functioning

During the initial eligibility session, we assessed children's intellectual ability with an abbreviated, three-subtest version of the *Wechsler Preschool and Primary Scale of Intelligence* (WPPSI-III) for children ages 2 years, 6 months to 7 years, 3 months. The Vocabulary, Matrix Reasoning, Picture Completion subtests were administered, from which an Estimated Full-Scale IQ score (normative mean of 100, *SD* of 15) was determined (Sattler, 2008); this IQ score was covaried in our analyses as an indicator of intellectual functioning. Abbreviated WPPSI versions have shown high reliability and convergent validity (e.g., LoBello, 1991), and this 3-subtest composite correlates strongly ($r = 0.90$) with full-scale IQ in the normative sample (Sattler, 2008).

2.3.3 | Social skills

Teachers completed the Social Skills Improvement System (SSIS, 46 items; Gresham & Elliott, 2008) at Years 1 and 2; because Years 1 and 2 teacher reports occurred during different school years, with different teachers (in 97.6% of cases), different classrooms, and many different peers, Year 2 social skills were considered most relevant to children's Year 2 peer rejection and acceptance. Thus, the Year 2 total social skills standard score was utilized as a predictor of peer acceptance and rejection in our analyses to examine how children's recent and current social skills during the current school year, in the months leading up to Year 2 data collection, predicted changes in children's peer rejection or acceptance from the prior school year. Cronbach's alpha for total social skills is strong (above 0.90), with adequate test-retest reliability (above 0.80) and validity (Crosby, 2011). In the current sample, Cronbach's alphas for the social skills domain were 0.93 and 0.95.

2.3.4 | Child internalizing symptoms and externalizing behaviors

The Caregiver-Teacher Report Form ages 1.5–5 and Teacher Report Form ages 6–18 (C/TRF) (Achenbach & Rescorla, 2000, 2001) were used at Years 1 and 2 to assess teacher-reported problems, depending on child age at

each assessment. Broadband T scores (total, externalizing, and internalizing problems) are produced with means of 50 ($SD = 10$). Scores have shown excellent validity in association with other behavior problems measures (Achenbach & Rescorla, 2000) and autism characteristics (Sikora et al., 2008). The present study utilizes Year 2 internalizing and externalizing t scores so as to examine how children's Year 2 peer rejection and peer acceptance are accounted for by symptoms and behaviors in recent months.

2.3.5 | Peer acceptance

To examine the extent to which children are socially accepted at school, the Isolated-Integrated scale of the Social Competence and Behavior Evaluation (SCBE; LaFreniere & Dumas, 1995) was completed by teachers at Years 1 and 2. Responses on this 10-item scale range from 1 (the behavior never occurs) to 6 (the behavior almost always occurs); teachers report on both child-directed and peer-directed actions reflecting the child's overall acceptance among peers; responses are summed for a peer acceptance score. Sample items include: "Children seek him/her out to play with them," "Remains apart, isolated from the group" (reversed), and "Is involved wherever the children are having lots of fun." SCBE subscales have shown inter-rater reliability of 0.78–0.91 and internal consistency reliability of 0.80–0.92 (LaFreniere & Dumas, 1996). In our sample, the Isolated-Integrated scale had an alpha of 0.87–0.90.

2.3.6 | Peer rejection

To determine the extent to which students were actively rejected by their classroom peers, we used the three-item peer rejection subscale from the C/TRF first derived by Steensma and colleagues (2013), which was in turn based on prior work by Zucker et al. (1997). The three-point response scale includes *not true* (0), *somewhat true* (1), and *very true* (2) options; responses to the following three items are averaged to create a composite score: ("Doesn't get along with other [children/pupils]," "Gets teased [by other children/a lot]," and "Not liked by other [children/pupils],") has shown strong content validity and strong reliability in prior use (Cronbach's alpha = 0.81; Steensma et al., 2013). Of note, these three items are not included in either the internalizing or the externalizing scales of the C/TRF, which are predictors in this study. We used this composite as our peer rejection variable at Years 1 and 2. In our sample, the composite showed Cronbach's alphas of 0.63–0.74.

3 | RESULTS

Descriptive analyses were conducted in SPSS Version 26; correlations and regressions were conducted in Mplus 8.3 (Muthén & Muthén, 1998–2017) using full information maximum likelihood (FIML) to estimate missing data; we report Mplus standardized StdYX model results. Teacher-report data was missing for 14.5% of children at Year 1 and 22.9% at Year 2; FIML has shown to be robust to bias at this level of missingness (Enders, 2001). Data were missing completely at random [Little's MCAR test: $\chi^2(105, N = 166) = 113.53, p = 0.27$].

Following descriptive analyses, multiple regression models were used to determine the child factors most predictive of changes in peer acceptance and rejection over time. In each regression, Year 1 levels of the corresponding peer variable (acceptance or rejection) were entered in Step 1 of the model to predict Year 2 acceptance or rejection; this approach to examining change is more statistically powerful than using change scores as the dependent variable (Rausch et al., 2003).

TABLE 1 Descriptive statistics for child characteristics, peer acceptance, and peer rejection

Measures	N	Mean (SD)	Min.	Max.	% in Clinical or Borderline Range
Child Developmental Covariates:					
Cognitive Functioning: WPPSI Estimated IQ	166	88.4 (18.2)	46	139	% <70: 16.9
Autism Characteristics: ADOS calibrated score	162	7.6 (1.8)	3	10	-
Child Social, Behavioral, & Emotional Adjustment:					
Social Skills: SSIS Total Social Skills Standard Score (teacher rpt) at Year 2	125	86.4 (14.6)	42	122	% <70: 8.8
Internalizing Problems: C/TRF internalizing T score (teacher rpt) Year 2	126	56.2 (8.8)	37	84	33.3%
Externalizing Problems: C/TRF externalizing T score (teacher rpt) Year 2	126	56.1 (8.7)	36	81	31.7%
Peer Acceptance and Peer Rejection:					
Peer Acceptance: Isolated-Integrated score on the SCBE (teacher report), Year 1	132	30.7 (10.7)	10	58	-
Peer Acceptance: Isolated-Integrated score on the SCBE (teacher report), Year 2	126	30.2 (9.7)	10	60	-
Peer Rejection: C/TRF Peer Rejection composite (teacher report), Year 1	142	0.22 (0.34)	0	1.33	-
Peer Rejection: C/TRF Peer Rejection composite (teacher report), Year 2	128	0.28 (0.44)	0	2.00	-

Note: Descriptive statistics reflect raw data.

Abbreviations: ADOS, Autism Diagnostic Observation Schedule; C/TRF, Caregiver/Teacher Report Form; SCBE, Social Competence and Behavior Evaluation; SSIS, Social Skills Improvement System; WPPSI, Wechsler Preschool & Primary Scale of Intelligence III.

TABLE 2 Correlations of child characteristics, peer acceptance, and peer rejection

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Peer Acceptance Y1	-											
2. Peer Acceptance Y2	0.54***	-										
3. Peer Rejection Y1	-0.19*	-0.26**	-									
4. Peer Rejection Y2	-0.01	-0.23**	0.39***	-								
5. IQ	0.42***	0.35***	-0.06	-0.02	-							
6. Autism Characteristics	-0.27**	-0.30***	0.02	-0.06	-0.34***	-						
7. Social Skills Y1	0.72***	0.53***	-0.25**	-0.15	0.52***	-0.25**	-					
8. Social Skills Y2	0.40***	0.69***	-0.24**	-0.30***	0.42***	-0.17 ^a	0.42***	-				
9. Internalizing Problems Y1	-0.54***	-0.36***	0.39***	0.07	-0.30***	0.15 ^a	-0.48***	-0.38***	-			
10. Internalizing Problems Y2	-0.11	-0.28**	0.24**	0.30***	-0.05	0.03	-0.15	-0.30***	0.31***	-		
11. Externalizing Problems Y1	-0.32***	-0.29**	0.49***	0.20*	-0.27***	0.12	-0.53***	-0.38***	0.55***	0.20*	-	
12. Externalizing Problems Y2	-0.05	-0.25**	0.31***	0.49***	-0.11	-0.03	-0.24**	-0.46***	0.22*	0.52***	0.48***	-

Note: Correlations were conducted using FIML to address missingness.

Y1 = Year 1, Y2 = Year 2.

^a*p* < 0.10.

p* ≤ 0.05; *p* ≤ 0.01; ****p* ≤ 0.001.

TABLE 3 Predictors of change in peer acceptance or peer rejection from Years 1 to 2

Predictors	Peer acceptance at Year 2				Peer rejection at Year 2						
	Step 1		Step 2		Step 1		Step 2				
	B	SE (β)	β	SE (β)	B	SE (β)	β	SE (β)			
PA or PR, Year 1	0.42	0.08	0.47***	0.29	0.06	0.32***	0.11	0.38***	0.32	0.10	0.25**
IQ	0.04	0.05	0.09	-0.05	0.04	-0.08	0.002	0.01	0.002	0.002	0.10
Autism Chars	-0.77	0.44	-0.14 ^a	-0.78	0.34	-0.15*	0.022	-0.05	-0.006	0.020	-0.03
Social Skills	-	-	-	0.38	0.05	0.57***	-	-	-0.003	0.003	-0.11
Internalizing Probs.	-	-	-	-0.13	0.08	-0.12 ^a	-	-	0.001	0.005	0.01
Externalizing Probs.	-	-	-	0.08	0.07	0.07	-	-	0.018	0.005	0.37***

Note: For the peer acceptance model, in Step 1, $R^2 = 0.33$, $p < 0.001$; in Step 2, $R^2 = 0.60$, $p < 0.001$. For the peer rejection model, in Step 1, $R^2 = 0.15$, $p = 0.015$; in Step 2, $R^2 = 0.31$, $p < 0.001$. Either peer acceptance or peer rejection were entered into the regression, to match the dependent variable.

Abbreviations: PA, peer acceptance. PR, peer rejection.

^a $p < 0.10$.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

3.1 | Descriptive analyses

Descriptive statistics are shown in Table 1. Correlations, shown in Table 2, indicate moderate stability of acceptance and rejection with two different teacher raters across Years 1 and 2 (r s of 0.54 and 0.39, respectively; p s \leq 0.001). Social skills, internalizing problems, and externalizing problems were also stable from Years 1 and 2 (r s of 0.42, 0.31, and 0.48, respectively; p s \leq 0.001); these correlations are similar to or higher than generally observed between synchronous cross-informant ratings, such as parents and teachers, in other studies (e.g., Kanne et al., 2009). Paired samples t tests indicated that rejection and acceptance did not significantly change from Years 1 to 2 (rejection: $t = -1.147$, $p = 0.25$; acceptance: $t = 0.16$, $p = 0.87$).

We examined item-level frequencies for the three, teacher-reported peer rejection items (collapsing *somewhat true* and *very true* responses). Among children with teacher-report data at both Years 1 and 2, 19.4% of autistic children were described as getting teased by other children during 1 or both years (9.9% in Year 1, 14.2% in Year 2), and 46.6% were described as not getting along with other children in 1 or both years (32.1% Year 1, 34.4% Year 2). Further, 26.9% were described as not liked by other children in 1 or both years (16.3% Year 1, 21.1% Year 2). In all, 51.9% of autistic children were described by teachers as either teased, rejected, or not liked by their peers during 1 or both school years (36.9% Year 1, 40.6% Year 2).

Next we examined item-level frequencies for selected peer acceptance items [collapsing *often* (4 and 5) and *almost always* (6) responses on the 6-point scale]. Among children with data at both Years 1 and 2, 43.4% were described as initiating or proposing games to other children (24.4% in Year 1, 23.6% in Year 2), and 60.4% were sought out by other children to play with them (39.0% Year 1, 40.3% Year 2). On the other hand, 31.0% of autistic children were described as remaining apart and isolated from the group (24.4% Year 1, 18.6% Year 2) and 27.7% were described as not talking or interacting during group activities (21.3 Year 1, 14.0% Year 2).

3.2 | Predicting change in peer acceptance

A multiple linear regression model was conducted to determine which child factors (social skills, internalizing symptoms, and externalizing problems) were associated with change over time in children's peer acceptance (see Table 3). In Step 1, IQ and autism characteristics were entered as covariates along with Year 1 peer acceptance. Year 1 peer acceptance predicted Year 2 peer acceptance as expected; autism characteristics added marginal variance, while IQ did not. This model accounted for 33.0% of the variance in Year 2 peer acceptance. In Step 2, social skills, internalizing symptoms, and externalizing behaviors at Year 2 were added. The final model was significant, explaining 60.4% of the variance. In addition to Year 1 peer acceptance and autism characteristics, social skills significantly predicted Year 2 peer acceptance in the final model. In other words, children with greater teacher-reported social skills showed greater gains, or lower declines, in peer acceptance at Year 2, after accounting for Year 1 peer acceptance. Internalizing symptoms added marginal variance, while externalizing behaviors did not.

3.3 | Predicting change in peer rejection

Next we examined predictors of change in peer rejection over time using a similar regression (Table 3). In Step 1, Year 1 peer rejection was associated with Year 2 rejection, but neither the IQ or autism characteristics covariates added unique variance to the model. This model accounted for 14.9% of the variance in Year 2 peer rejection. In the second step, social skills, internalizing problems, and externalizing behaviors at Year 2 were added; this final model explained 31.2% of the variance in peer rejection. In addition to teacher-reported peer rejection ratings in Year 1, child externalizing behaviors significantly predicted change in peer rejection; greater externalizing behaviors were

associated with relative increases in peer rejection by Year 2. Neither social skills nor internalizing problems predicted change in peer rejection.

4 | DISCUSSION

This study investigated the contributions of social skills, internalizing symptoms, and externalizing behaviors to changes in peer rejection and peer acceptance from one school year to the next among 166 early elementary-age autistic students. Descriptive analyses indicated that the majority of autistic children (51.9%) were described by their teachers as experiencing some form of peer rejection in Year 1 and/or Year 2. Regarding peer acceptance, selected teacher-report items from the larger scale indicated that nearly half of children often initiated games with their peers and over half were regularly sought out by other children to play with them.

Using a longitudinal design, we identified child characteristics that uniquely predicted changes in peer acceptance and rejection over a 1-year period from 1 school year to the next. Changes in peer acceptance over time were predicted by children's social skills, whereas changes in peer rejection were predicted by externalizing problems. On the other hand, children's internalizing symptoms did not predict changes over time in either peer acceptance or peer rejection. Our overall pattern of results—in which peer acceptance was predicted by social skills while peer rejection was predicted by externalizing problems—is in line with prior research that peer acceptance and rejection are distinct constructs that are predicted by different underlying variables (Coie et al., 1990; Juvonen et al., 2019). These findings are relevant to school psychologists, teachers, and other professionals working with autistic students in their classrooms.

4.1 | Predicting changes in peer acceptance

With regard to peer acceptance, autistic children who had stronger social skills experienced improved peer acceptance from 1 school year to the next. Because our sample's mean scores on peer acceptance were relatively consistent over time (mean peer acceptance scores of 30.7 and 30.2 at Years 1 and 2), this means that while children with relatively higher social skills experienced improved social acceptance over time, children with lower social skills actually experienced a relative decline in peer acceptance from 1 school year to the next. While previous work on social skills and peer relationships has been primarily cross-sectional, this link between social skills and improved peer acceptance over time supports the idea that peer acceptance is flexible over time and is driven in part by children's social competencies. This potential malleability of peer acceptance opens the door to interventions supporting prosocial behaviors and engagement, which may foster greater overall peer inclusion (Santillan et al., 2019).

Gains in peer acceptance were also negatively predicted by autism characteristics, whereas IQ, internalizing problems, and externalizing problems did not predict children's peer acceptance over time. This association between autism characteristics and change in social acceptance over time indicates that children with fewer autism characteristics are more included by peers over time. Conversely, this finding also suggests that the social environment may become less accepting over time for children with marked autistic characteristics. In other words, children whose autism characteristics are more apparent may experience declines in, or lesser gains in, peer acceptance as they move from grade to grade. This pattern may reflect the impact of negative societal attitudes toward disabilities on school interactions; classrooms and schools are often set up for nonautistic learners, nonautistic communication methods are valued, and ableism and stigma toward neurodiverse behaviors and social communication methods persists (Rausch et al., 2019). Interventions that promote affirmation and acceptance of neurodiversity may be helpful in promoting nonautistic peers' inclusive behaviors toward their autistic classmates and fostering lasting social acceptance (Elledge et al., 2016; Rausch et al., 2019). Reflective of social referencing,

when teachers and school leaders model autism acceptance, positively acknowledge children's different methods of communicating, and validate diverse means of initiating or responding to social overtures, this may carry over to impact classmates' acceptance of their neurodivergent peers (Hendrickx et al., 2017).

4.2 | Predicting changes in peer rejection

With regard to peer rejection, externalizing problems uniquely predicted change in peer rejection from 1 school year to the next, whereas other child factors (social skills, internalizing problems, IQ, autism characteristics) did not. This finding extends past research showing a path from externalizing problems to rejection among nonautistic students (DeRosier et al., 1994; Sturaro et al., 2011) to support the same pathway among autistic students as well. Externalizing problems appeared to specifically predict changes in children's peer rejection and not their peer acceptance; in other words, externalizing problems do not appear to increasingly detract from children's ability to engage with peers as integrated, included members of the peer group over time.

This link between externalizing behavior problems and peer rejection further underscores the crucial importance of providing intensive, early, and proactive support to address student's challenging behaviors in the classroom and the underlying skill areas that these challenging behaviors may be indicating. While the social and communicative characteristics of autism are most likely to be addressed early, our findings argue for addressing behavior challenges at the same time, especially given the potential long-term impacts of peer rejection on child well-being. In addition, these findings have implications for the long-term mental health of autistic children, given the negative effects of peer rejection and exclusion on mental health into adolescence. With a full third of our sample presenting with borderline or clinical range externalizing problems, and over half of the sample experiencing peer rejection in at least one of the study years, the long-term ramifications of this exclusion in adolescents are a grave concern (Arslan, 2018; Mulvey et al., 2017).

Our finding that externalizing behaviors uniquely predicted change in peer rejection over time suggests particular risks for autistic children who have co-occurring externalizing behaviors. Indeed, given that mean levels of peer rejection stayed similar across Years 1 and 2, this means that autistic children with high externalizing problems experienced worsening peer rejection over time from one grade to the next. Peers may be increasingly less inclined to spend time with classmates who are displaying externalizing behaviors, such as aggression, rule-breaking, or impulsivity. Alternatively, societal messages around externalizing behaviors and adult reactions to externalizing behaviors may also shape how peers view these behaviors and the peers enacting them. For instance, children with disabilities also experience disproportionate levels of exclusionary discipline relative to their peers at these ages, often purportedly in response to externalizing behaviors such as aggression (Krezmien et al., 2006; Zeng et al., 2021). Consistent with a DisCrit framework, the intersection of disability and other marginalizing identities may have a particularly adverse impact on children's Student–teacher conflict, vulnerability to school discipline, and in turn, perceptions by peers (Annamma et al., 2013). Our sample was too small to consider differences by race; however, future research with larger samples of children of color is warranted given the links between race, disability, school discipline, and children's peer rejection in nonautism research (Bukowski et al., 2020; Graham & Echols, 2018).

4.3 | Internalizing symptoms

In this study, internalizing problems did not predict change in either peer acceptance or peer rejection over time, in contrast to research among older autistic children (4th grade and up; Jones & Frederickson, 2010; Wright & Wachs, 2019). Internalizing problems may be under-detected by teachers (Kanne et al., 2009; Levinson et al., 2021) or reported at lower rates (Llanes et al., 2018), especially for autistic students, and may be better assessed through

self-report, especially as children get older. Autistic adolescents and adults describe these anxiety and depressive symptoms as a salient challenge across their school years (Berkovits et al., 2020; Williams et al., 2019). Although not examined in this study, a bidirectional pathway is plausible, whereby internalizing symptoms lead to social withdrawal, and this social disconnectedness in turn contributes to greater internalizing symptoms over time. Research among older children using self-report methods may further elucidate this pathway.

4.4 | Limitations and future directions

The study is limited by its reliance on teacher-reported ratings for both behavior problems and children's peer rejection and acceptance, rather than also including observational ratings, student self-report, or those from a different rater. Given this reliance on teacher-report, we cannot determine whether we are measuring how teachers' negative *perceptions* of students are shaping student peer rejection, or how students' *actual* school behavior is shaping student peer rejection. It may be that students' behavior challenges directly influence peers' opinions of them, leading them to dislike and actively reject the student. Alternatively, the observed association between teacher-rated behavior problems and peer rejection may also reflect, in part, the role of teachers' perceptions of students in shaping peers' perceptions of these students over time (Hendrickx et al., 2017; McAuliffe et al., 2009) and in potentially mediating the link between student behavior and peer acceptance or rejection. Indeed, in an experimental paradigm, children reported stronger dislike and less acceptance toward hypothetical peers when they observed them receiving negative feedback from teachers than toward peers whose teachers gave them positive or neutral feedback, even when the peers' behavior was the same (White et al., 1996). Further research would be needed to determine whether teachers' perceptions of autistic students are shaping these students' likelihood of rejection by peers. If supported, then we could expect that interventions to improve teachers' perceptions of autistic students may carry over to improve students' relationships with peers as well (Breeman et al., 2015; Eisenhower et al., 2015). All in all, efforts by teachers to foster social acceptance may be especially valuable for autistic students who have behavior challenges.

The potential impacts we observed of externalizing problems on later peer rejection, and of social skills on later peer acceptance, have powerful implications for practice. At the same time, we did not examine whether the associations were reciprocal; it is likely that, over time, peer rejection and acceptance, in turn, have influences on children's ability to develop social skills or on the exacerbation or lessening of challenging behaviors over time. While these pathways have shown support among nonautistic children (Laird et al., 2001; Sandstrom et al., 2003), these potential bidirectional pathways warrant examination in autism as well.

While teacher-report measures provide a valuable window into children's teacher-observed experiences across a range of school situations; teacher report is subject to bias, including bias linked to student race and ethnicity (Ho et al., 2012), gender (Berg-Nielsen et al., 2012), autism attitudes (Chung et al., 2015), and perceived ability (Tobisch & Dresel, 2017). Given the value of centering the views of autistic children in research that pertains to them, future work should also examine autistic children's perspectives on their peer experiences (Scott-Barrett et al., 2019); this requires validating self-report measures of peer relationships, such as the Berkeley Puppet Interview, with young autistic children. As another limitation, our peer rejection measure is composed of only three items and, while it has demonstrated strong psychometrics, research with a more nuanced measure would be beneficial.

4.5 | Implications for practice

Our findings suggest that school psychologists' efforts to support children's social skills development may enhance their acceptance with peers. Future work should examine how a focus on social skills can be embedded within the screening and intervention process of a multi-tiered systems of support approach for autistic children. However,

school-based professionals should ensure that any social skills support is driven by students' own social goals and are affirming of neurodiversity, authenticity, and self-determination (Bottema-Beutel et al., 2018; Cage & Troxell-Whitman, 2019) to avoid reinforcing stigma and ableism, inhibiting authenticity, or enforcing masking, which have negative mental health implications (Hull et al., 2017).

At the same time, social skills support may not meaningfully benefit the peer relationships of children who are primarily experiencing rejection. Instead, efforts to alleviate externalizing behaviors may be more helpful in this regard, especially given that the majority of autistic children experience clinically elevated externalizing symptoms by some accounts (e.g., Romero et al., 2016). In line with evidence-based practice, these externalizing behaviors may be viewed as a communication of underlying difficulty or a reflection of lagging skills (Maddox et al., 2018); as such, changing the environment so as to support the student's success may lessen externalizing behaviors and, in turn, may reduce peer rejection. In addition, evidence-based practices for coping with anger and irritability, including self-monitoring, self-management skills, and engaging in collaborative problem-solving, may carry over to support both behavioral and peer-related outcomes.

While research on child factors contributing to peer relationships is valuable, further research must also look to the larger context surrounding children's peer acceptance and rejection, not only at child characteristics. Even when socio-emotional difficulties in school are associated with internal child factors, these difficulties may be more attributable to external factors, such as the classroom or school environment. For instance, the quality of Student-teacher relationships predicts children's later peer acceptance (Hughes & Kwok, 2006; Troop-Gordon & Kopp, 2011) and peer victimization (Elledge et al., 2016), while teachers' liking of students predicts their peer reputation (Hughes & Chen, 2011). Other determinants of peer relationships include class size (Anderson et al., 2016), class norms (Gasser et al., 2017), and class-wide attitudes toward disabilities (de Boer et al., 2012). Teacher strategies, such as modeling acceptance and affirmation toward autistic students and students with externalizing behaviors, may impact how classmates view and interact with autistic peers (Elledge et al., 2016; Salisbury et al., 1995). As such, child-directed interventions such as social skills interventions and behavior support may fall short without simultaneous efforts to identify intervention targets external to the child, such as autism-affirming training for teachers or changes to school-wide culture and attitudes.

Interestingly, our findings suggest that teacher-, classroom-, and school-level factor may be especially important to examine in relation to peer rejection. While child characteristics accounted for 60% of the variance in peer acceptance over time, child characteristics only predicted 31% of the variance in peer rejection over time. In other words, individual factors, namely social skills, account for the majority of the variability in how well included autistic students are in the classroom but are less helpful in explaining the variability in peer rejection. Indeed, with children changing classrooms and teachers over the course of our longitudinal design, unexamined teacher- or classroom-level differences may be contributing to changes in rejection from year to year.

Alternatively, our pattern of results may indicate that peer rejection is more malleable and less stable than peer acceptance over time. Indeed, sociometric research among rejected children shows a substantial degree of change in and out of the rejected sociometric status group, with factors such as participation in extracurricular activities and degree of parental monitoring predicting improved acceptance among initially rejected children (Sandstrom & Coie, 1999). Future investigation could examine whether integrating autistic students into extracurriculars, with sufficient support for them to succeed in these extracurriculars, might foster greater peer acceptance over time.

5 | CONCLUSIONS

Although social skills are important in the development of positive peer relationships, in this study, they did not guard against peer rejection over time. Meanwhile, heightened externalizing problems led to increases in peer rejection over time, but did not appear to predict declines in children's ability to engage with peers as an integrated,

included member of the peer group over time. Importantly, these findings indicate that peer rejection and peer acceptance are malleable over time as children move from one grade to the next.

ACKNOWLEDGMENTS

This paper was based on a longitudinal study funded by the Institute of Education Sciences (R324A110086; J. Blacher, P.I.). Support was also provided by the SEARCH Family Autism Resource Center in the Graduate School of Education, UC Riverside. We are indebted to our colleagues and students and to the children, parents, and teachers who participated in this research.

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How to cite this article: Feldman, M., Hamsho, N., Blacher, J., Carter, A. S., & Eisenhower, A. (2022). Predicting peer acceptance and peer rejection for autistic children. *Psychology in the Schools*, 1–24. <https://doi.org/10.1002/pits.22739>