Promoting Social Competence and Peer Relationships for Adolescents With Autism Spectrum Disorders

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Abstract

This article addresses some of the key considerations and complexities associated with intervening to address social competence and peer relationships of adolescents with autism spectrum disorder (ASD) in middle and high school settings. First, we provide a brief overview of the social context during adolescence for all students. Next, we highlight particular challenges for adolescents with ASD. Then, we discuss potential school-based intervention pathways that appear particularly responsive to these contexts and challenges. Finally, we offer several recommendations for research and practice aimed at improving the social competence and connections of young people with ASD—during high school and into early adulthood.

Keywords

autism spectrum disorders, social competence, social interaction, friendship, high school, transition

The interactions and relationships students have with their classmates, teachers, administrators, and other staff throughout the school year offer a primary avenue through which students learn the array of academic, social, vocational, self-determination, and other functional skills that can contribute to their short- and long-term success. Moreover, the extent to which students develop satisfying relationships within and beyond the classroom can affect their sense of belonging, acceptance among peers, satisfaction with school, and overall well-being (Wentzel, Donlan, & Morrison, 2012). Research consistently affirms the powerful impact the presence—or absence—of relationships can have on the lives of children and youth (Rubin, Bukowski, & Laursen, 2009). It is of little surprise that equipping students with the skills, knowledge, and opportunities that enable them to be socially successful is considered a key component of comprehensive secondary schooling (Carter & Draper, 2010).

Participating meaningfully in the array of social interactions and relationships occurring within a school community is also important for adolescents with autism spectrum disorder (ASD). Although social challenges are a defining feature of this particular disability category (American Psychiatric Association [APA], 2013), the presence of autism in no way diminishes the contributions strong

social-related skills, connections, and supports can make to success in school and beyond. Put simply, relationships really do matter for *all* adolescents. Recognizing the importance of this dimension of students' lives, researchers and practitioners have focused considerable attention on determining how best to provide instruction, supports, and opportunities that enhance the social competence and connections of students with ASD (e.g., Bellini, Peters, Brianner, & Hopf, 2007; Carter, Sisco, Chung, & Stanton-Chapman, 2010).

Definitional criteria for ASD give particular prominence to social-related deficits (APA, 2013; Individuals With Disabilities Education Improvement Act [IDEIA], 2004). Specifically, difficulties in the areas of social interaction, communication, and/or unusually restricted and repetitive behaviors and interests often coalesce to limit a student's

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participation in the activities and relationships that take place across school, home, and community settings. However, the social-related needs and outcomes of adolescents with ASD can vary widely from one student to the other. While some students have limited speech and complex communication challenges, others are quite fluent in their conversations with adults and peers. Some students will engage in severe behavior problems that restrict peer interactions; other students may struggle more with navigating the unwritten social rules among adolescents.

Although substantial attention has focused on addressing the social competence of young children with ASD, the social-related challenges of these children typically do not ameliorate with age. Indeed, they may become even more pronounced during adolescence as the gap between the existing social skills and prevailing social expectations widens (Rosenthal et al., 2013). For example, early adolescence and adulthood have been associated with initial increases in aggression, self-injurious behavior, anxiety, and depression (Schall & McDonough, 2010). Many adolescents with ASD report that they are lonely, have difficulty establishing friendships, or are bullied by peers (Humphrey & Symes, 2010; Locke, Ishijima, & Kasari, 2010). These—along with other challenges addressed later—may contribute to the paucity of peer relationships and social involvement of adolescents with ASD. According to a nationally representative longitudinal study involving more than 1,000 parents of students (ages 13–16 years) with autism (Wagner, Cadwallader, Garza, & Cameto, 2004), only 6% of youth with autism frequently saw friends outside of school, only 10% frequently received telephone calls from friends, and only 49% were invited to another peer's social event at any time during the previous year. In short, the very skills and relationships that may be the most instrumental for students with ASD are among the most elusive.

An enduring need exists for guidance on how best to promote social competence and peer relationships for students with ASD at the middle and high school level. Reichow and Volkmar (2010) reviewed 66 empirical studies addressing the social outcomes of children with ASD. More than half (53%) of these studies focused on preschool children, 42% focused on school-aged children between the ages of 6 and 12, and only 5% focused on adolescents and/or adults (ages 13 years and older). Similarly, in their review of interventions aimed at improving peer interaction outcomes, Carter et al. (2010) identified only 9 studies involving at least one student with ASD at the middle school level and only 5 studies at the high school level.

The purpose of this article is to address some of the key considerations and complexities associated with intervening in schools to address social competence and peer relationships for transition-age youth with ASD. First, we provide a brief overview of the social context during adolescence for all students. Next, we highlight some of the particular challenges that must be addressed within secondary schools to provide adolescents with the skills and opportunities needed to be socially successful. We then review potential intervention pathways that appear particularly responsive to these contexts and challenges. Finally, we offer recommendations for research and practice aimed at improving the social-related outcomes of young people with ASD.

Social Context During Adolescence

Adolescence is a period of myriad transitions. This is especially apparent when reflecting on the social contexts students must learn to navigate. Like all adolescents, students with ASD encounter changes in (a) the peer culture, (b) their relationships with adults, (c) the settings in which they spend their school day, and (d) prevailing expectations for social success. However, these changes may be particularly difficult to negotiate for adolescents with ASD. Recognition of each has implications for how educators address the social-related needs of these students.

Changing Relationships With Peers

As most children enter adolescence, the prominence of relationships with parents and teachers gradually gives way to the preeminence of peers as primary interaction partners and sources of emotional support. Although educators and family members still play a critical role in the lives of students, a growing proportion of students' days are spent in the company of their peers. At the same time, the nature of students' relationships with their peers can change from what they may have experienced in elementary school. Friendships, intimate relationships, and affiliations with cliques, crowds, and other networks of peers all receive greater emphasis and increase in complexity (Brown & Klute, 2003). In particular, new friendships begin to form on the basis of shared interests, strengths, associations, and aspirations. Thus, social competence interventions must emphasize the social, emotional, cognitive, and behavioral skills students need to interact successfully with other adolescents.

It is this growing influence of peers on the skill development, school engagement, and social acceptance of students that may be the most apparent to observers in secondary schools. Peer culture increasingly shapes the values and norms around academic engagement and student-to-student relationships (Lynch, Lerner, & Leventhal, 2013). Consequently, the capacity of students with ASD to understand and adapt their behavior to fit within the peer culture as well as match teacher expectations becomes critical to social success. Although students gain more opportunities for entrance and acceptance into a wider range of peer groups in secondary settings, such groups are self-selecting

and typically consist of like-minded individuals with similar skills, values, and experiences (Ryan, 2000).

The ways in which students initially meet and maintain their connections with their peers can also look different during adolescence. In high school, students spend increasing amounts of time with their peers outside of the classroom within a range of structured (e.g., extracurriculars) and informal (e.g., "hanging out with friends") activities (Brown & Klute, 2003). Indeed, Johnson (2004) found that adolescent boys and girls spent 2.3 to 3 hr per day socializing. The advent of new technologies and social media also introduces new ways for students to interact beyond the school day. Adolescents have incorporated blogging, emailing, instant messaging, and texting; sharing music, pictures, and videos; and participating in social networking sites in every facet of their lives (Rideout, Foehr, & Roberts, 2010). Whatever the venue for interaction—whether in person or online—the complexities of social rules become more nuanced and can involve hidden assumptions that can make navigating peer relationships challenging.

Changing Relationships With Adults

The place of adults in the lives of adolescents also changes. Adolescents gain more autonomy and have less assistance from adults than during elementary school (Brown & Klute, 2003). As more peer interactions of adolescents take place outside of the immediate purview of adults, students with ASD may have limited adult support in navigating those interactions. At the same time, educators can still play a major role in assisting young adults to meet and develop relationships with peers. For example, teachers can also facilitate peer relationships and encourage students' sense of school connectedness by providing opportunities for students to engage in ongoing and enjoyable interactions with peers (Whitlock, 2006).

For students with ASD who have extensive support needs, it is the absence of change in support delivery models that can especially affect their social connections during middle and high school. Increasing numbers of students with more severe disabilities receive one-to-one support from paraprofessionals within inclusive classrooms, clubs, and other secondary school activities. Indeed, paraprofessionals report spending part or all of their day providing direct support to students (Fisher & Pleasants, 2012) and most states now employ more paraprofessionals than certified special educators (U.S. Department of Education, 2011). This heavy reliance on individually assigned paraprofessional support—which typically involves the close and constant proximity of an adult across the school day—may run counter to the changing nature of peer relationships mentioned previously. In other words, the pervasive presence of adults in the lives of students with significant disabilities may inadvertently hinder peer interactions and the development of peer relationships during adolescence.

Changing Educational Contexts

The settings in which students spend their school day can also change dramatically as students get older. Students typically take between 6 and 8 classes concurrently in a given semester, during which they may encounter as many as 200 different classmates and multiple teachers. Expectations for social and academic success can vary widely across settings, particularly when students cross special and general education settings. In fact, participation in general education classrooms is especially variable for adolescents served under the special education category of autism and tends to diminish over time (U.S. Department of Education, 2011). Among students ages 12 to 17 years with autism, two fifths spend most (80% or more) of their day in general education classrooms, one fifth spend between 40% and 79% of their day in general education classrooms, and two fifths spend most (60% or more) of their day in special education classrooms or other school placements. Among students ages 18 to 21 years with autism, about one sixth spend most (80% or more) of their day in general education classrooms, about one seventh spend 40% to 79% of their day in general education classrooms, and two thirds spend most (60% or more) of their day in special education classrooms or other placements (U.S. Department of Education, 2011). While some students with ASD have numerous opportunities to meet, work with, and get to know their peers without disabilities, the same opportunities are more limited for students with more severe disabilities.

Changing Definitions of Social Success

As intimated throughout the previous discussion, expectations for what it really means to demonstrate social competence can change dramatically during adolescence (Rubin et al., 2009). Within the school day, social-related expectations often vary widely across school settings and educators (Lane, Carter, Common, & Jordan, 2012). The social and communication skills required to interact successfully with adults often differ from those needed to get along well with peers. And students are increasingly expected to navigate these diverse interactions and relationships more independently and with less direct adult support. In addition to providing instruction and supports that promote social competence *during* middle and high school, educators must also help adolescents acquire the skills, attitudes, and behaviors that will promote social success *after* graduation. In other words, an important aspect of transition education involves equipping students with the social competence and connections they will need to thrive socially in the workplace, in postsecondary educational programs, and/or in

community life. This focus on the current and future expectations adds another layer of complexity to intervention.

Challenges for Adolescents With ASD

Adolescents with ASD can face particular challenges developing social competence and peer connections throughout middle and high school. Although students with ASD represent an extremely heterogeneous group, several common characteristics can make navigating the changing social context during adolescence particularly difficult. First, differences in social-communication skills define this disability, including challenges engaging in conversations, reading non-verbal cues, and building age-appropriate friendships (APA, 2013). Many youth with ASD also struggle with the pragmatic aspects of social interaction, including topic management, reciprocity, intonation, and gaze management (Paul, Orlovski, Marcinko, & Volkmar, 2009). A subset of students with more severe disabilities cannot speak or have very limited means of communication. For these students, interventions involving augmentative and alternative communication (AAC) systems may be particularly critical (Ganz et al., 2011).

Second, behavioral distinctions can further challenge peer interactions. For example, repetitive behaviors and limited flexibility can make it difficult to navigate the dynamic social world and lead to exclusion from certain peer groups. In addition, circumscribed interests may hinder social interactions if students stick narrowly to selected conversation topics without acknowledging the interests of others. Some youth with ASD engage in more severe interfering behaviors, such as aggression, self-injury, and property destruction (Kanne & Mazurek, 2011), which can be stigmatizing and can hinder the participation of adolescents in inclusive classrooms and other school activities.

Third, students with ASD are bullied more often than other students (Humphrey & Symes, 2010). It may be that some students with ASD have difficulty identifying and labeling this bullying, thereby decreasing the likelihood that they will report it to staff. Fourth, co-morbid mental health concerns are prevalent among students with ASD, including higher rates of depression and anxiety (Ghaziuddin, Ghaziuddin, & Greden, 2002). As social expectations and awareness of social-related challenges increase, symptoms of anxiety and depression may worsen for students with ASD (Bellini, 2006).

Promising Points of Intervention

Despite the myriad social opportunities and challenges introduced during middle and high school, relatively few studies have evaluated interventions to promote social competence and peer relationships as students with ASD transition through secondary school. In the absence of a deep literature base on which to draw, we review relevant research addressing each of five promising pathways for potential intervention efforts. These avenues involve directing intervention efforts toward (a) building the social competence of students with ASD, (b) improving the attitudes and skills of peers without disabilities, (c) addressing the supports and opportunities provided by educators, (d) initiating broader schoolwide efforts, and (e) engaging family members. The decision to organize our recommendations within a multifaceted framework was influenced by findings from prior reviews of the extant social competence literature (Bellini et al., 2007; Carter, Bottema-Beutel, & Brock, 2014; Carter et al., 2010) and our own work with schools. Our contention is that adopting intervention approaches that incorporate each of these areas in tandem holds the greatest promise for equipping students with the skills and opportunities needed to develop satisfying relationships and improved social competence. While we suggest multiple avenues for intervention, we emphasize that any intervention efforts must be individually tailored to meet the specific needs of particular students.

Intervention Approaches Focused on Students With ASD

Given the heightened social-related challenges associated with ASD, one primary intervention pathway involves teaching adolescents specific skills, knowledge, and dispositions presumed to increase the frequency and improve the quality of their interactions with peers and others. Interventions aimed at enhancing social competence emphasize social, communication, behavioral, and collateral skill instruction as the primary avenue for promoting acceptance, participation, and success within classrooms and other school or community settings. The primary avenues for delivering student-focused interventions have been (a) social skills training, (b) communication system use, (c) behavioral interventions, and (d) social cognitive instruction.

Social skills training involves directly teaching targeted social-related skills (e.g., turn taking, initiating, appropriate responding, maintaining eye contact, using social amenities) to enhance the interpersonal interactions of students with ASD. Educators provide instruction on discrete or clustered skills, with the goal of equipping students to perform these skills in natural contexts with typical social partners. To maximize effectiveness, social skills instruction should be driven by strong assessment, aligned to identified deficits, delivered with sufficient dosage, implemented with high fidelity, and provided in typical settings (Bellini et al., 2007; Bellini & Peters, 2008). Instruction can be provided to students individually or in groups, and may incorporate additional practices such as video modeling and self-management strategies (Hughes et al., 2013; Shukla-Mehta, Miller, &

Callahan, 2010). For example, a social skills group involving four to six students with ASD could focus on teaching targeted skills using a validated curriculum. While such social skills groups have been effective in clinical settings (e.g., *PEERS Program*; Laugeson, Frankel, Gantman, Dillon, & Mogil, 2012), less is known about the feasibility and effectiveness of social skills groups within high school classrooms.

For youth with complex communication challenges, it may be necessary to also increase their fluent use of aided or unaided communication systems with peers. Chung, Carter, and Sisco (2012) identified 31 intervention studies involving students with autism or intellectual disability who used AAC, 14 of which were carried out in middle or high school settings. An array of low-tech (e.g., communication books, PECS) and high-tech (e.g., speech-generating devices) systems can be drawn on to strengthen the communicative capacity of students. Although selection of these systems should be based on thoughtful assessment and contextual considerations, this category of interventions is built on the presumption that students require reliable and accessible modes of communication to participate fully in instructional and social contexts within schools.

Behavioral interventions are also advocated for decreasing behaviors that interfere with adolescents' opportunities for social interaction or hinder participation in inclusive activities. Interfering behaviors serving a social function (e.g., to gain attention or access to activities; to avoid tasks or social interaction) are often addressed by teaching students more appropriate alternative responses that serve the same function (Carr & Durand, 1985). For example, interventions incorporating differential reinforcement of alternative behaviors and functional communication training have resulted in reduction of repetitive behaviors, self-injury, and aggression, as well as increases in pro-social behaviors (Casey & Merical, 2006).

Finally, social cognitive interventions also hold promise for enhancing the social competence of adolescents with ASD. These approaches involve providing instruction on the social cognitive aspects of social interaction, including theory of mind, perspective taking, executive functioning, social problem solving, and emotion identification (Schmidt, Stichter, Lierheimer, McGhee, & O'Connor, 2011; Solomon, Goodlin-Jones, & Anders, 2004). For example, the *Social Competence Intervention* (Stichter et al., 2010) involves providing group-based instruction to adolescents with high-functioning autism on the use of social cognitive strategies, including self-monitoring and self-regulation.

Intervention Approaches Focused on Peers

Although students with ASD should certainly access high-quality, social-related skill instruction, the attitudes, skills, and knowledge held by peers without disabilities also strongly influences the frequency and quality of social interactions adolescents with ASD have with others in their school (Carter, Hughes, Copeland, & Breen, 2001). Peer-focused interventions involve providing information, training, and/or support to peers without disabilities to increase their confidence and willingness to interact and collaborate with their classmates with disabilities. In contrast to student-focused approaches, peers become the primary focus of intervention efforts to increase the availability of receptive interaction partners.

One widely incorporated peer-focused intervention strategy emphasizes providing accurate and relevant information about the strengths and needs of students with disabilities. When adolescents have had limited prior contact with students with ASD, they may possess less accepting attitudes, hold inaccurate or incomplete views about people with ASD, misinterpret the meaning of particular behaviors, and/or express reluctance to spend time with a student (Campbell, Morton, Roulston, & Barger, 2011). Researchers have suggested that if peers are not adequately educated about disabilities generally, or autism specifically, they may be hesitant to pursue new relationships with these students (Campbell & Barger, 2011). For example, peers might be hesitant to initiate a conversation with someone who communicates using an AAC device, engages in seemingly unusual behaviors, or only talks about a narrow set of topics unless they receive some initial guidance on how to interpret these behaviors. Peer educational interventions seek to address attitudinal and information barriers to peer relationships. Although providing such information can certainly be valuable, information alone is unlikely to shift substantially the willingness of peers to get to know their classmates with ASD.

Peer interaction training provides a more targeted approach for equipping particular peers with specific conversational strategies that are beneficial when working and interacting with a student with ASD with communication difficulties (Carter et al., 2010; Hughes et al., 2013). By strengthening the capacity of peers to be effective conversational partners, interactions involving students with ASD may be more likely to be initiated, reinforced, and maintained. Although the specific interaction skills taught to peers should be tailored toward the individualized needs of the student with whom they will be spending time, research has shown promising outcomes associated with efforts to teach peers to initiate and sustain conversations with someone who uses a particular AAC system, recognize and respond to naturalistic communication opportunities, interpret idiosyncratic communicative behaviors, broaden interactions to include other peers, and facilitate a student's participation in social and other learning activities (Hughes et al., 2013; Kent-Walsh, 2008).

Peer-mediated support interventions build on these two peer-focused approaches by incorporating informational efforts, peer training, and sustained interaction opportunities into a packaged support strategy facilitated by school staff. Although numerous variations on these interventions exist, peer-mediated strategies typically involve equipping and supporting peers to provide ongoing social and/or academic support to students with ASD in inclusive school or community settings (Carter & Kennedy, 2006). Core intervention components include (a) identifying students with ASD and peers who would benefit from and have interest in involvement, (b) orienting students to their new roles and providing relevant strategy instruction, (c) structuring regular interaction opportunities within classroom or non-instructional school settings, (d) providing sufficient (but not intrusive) guidance and support from school staff as students spend time together, and (e) evaluating the social and learning progress of participating students over time. Whether implemented within the classroom (i.e., peer support arrangements; Carter, Moss, Hoffman, Chung, & Sisco, 2011) or in other school settings (i.e., peer networks; Carter et al., 2013), these interventions have accrued strong empirical support for use at the secondary level. For example, peer-mediated interventions have been associated with increases in the frequency and quality of peer interactions, enhanced social connections, acquisition of social and communication skills, and the development of new friendships (e.g., Carter et al., 2011; Koegel et al., 2012). For adolescents without disabilities, greater appreciation of diversity, deeper commitment to the importance of inclusion, improved attitudes toward disability, enhanced self-esteem, and stronger advocacy have all been attributed to involvement in these school-based interventions (Copeland et al., 2004; Hughes et al., 2001).

Intervention Approaches Focused on Educator and Paraprofessional Supports

The approaches increasingly used to support adolescents with ASD to participate in inclusive classroom and school activities can inadvertently limit the opportunities students have to work alongside and develop relationships with peers without disabilities. Research indicates that individually assigned support models in which paraprofessionals, special educators, or other specialized staff remain in close and constant proximity to students with significant disabilities can increase the reluctance of peers to initiate conversations, reinforce perceptions of difference among students, or lead students with ASD to turn first to adults for assistance rather than to more natural sources of support available from peers (Carter, Sisco, Brown, Brickham, & Al-Khabbaz, 2008; Chung et al., 2012). Establishing peer-mediated support interventions that strategically fade adult

proximity, while ensuring that students still receive adequate social support, may be especially critical within secondary schools. At the same time, emphasizing the facilitative (vs. direct support) role of adults appears to be especially advantageous. School staff can capitalize on natural interaction opportunities by strategically facilitating interactions as students work or spend time together (Feldman & Matos, 2013). For example, paraprofessionals might highlight similarities among students, help interpret the communicative intent of unconventional behaviors, redirect questions back to students or their peers, model conversing with someone who uses an AAC device, or assign responsibilities requiring social interaction (Carter, Cushing, & Kennedy, 2009; Causton-Theoharis & Malmgren, 2005).

Efforts to promote social competence among students and greater receptivity among peers will have limited impact if adolescents with and without ASD lack sufficient opportunities to interact with one another during school. In other words, the extent to which students have regular, meaningful opportunities to spend time together in schools will likely moderate the impact of any student- and peer-focused interventions. Inconsistent access to general education classes already limits the overall extent to which students with and without ASD see one another (U.S. Department of Education, 2011). However, even within "inclusive" classrooms, clubs, cafeterias, and other secondary school settings, opportunities for sustained interaction can be quite limited (Carter et al., 2008; Carter, Hughes, Guth, & Copeland, 2005). Educators can embed interaction opportunities into ongoing instruction through the use of cooperative learning groups or other interdependent instructional arrangements (Cushing, Kennedy, Shukla, Davis, & Meyer, 1997). Indeed, the new Common Core high school standards address the importance of numerous social-related skills (e.g., perspective taking, speaking and listening skills, tone) and even state that "students must have ample opportunities to take part in a variety of rich, structured conversations—as part of a whole class, in small groups, and with a partner . . . " (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Educators can also plan interactive activities built around leisure activities or perseverative interests (Koegel et al., 2012). For example, a teacher may instruct the class to work in cooperative teams to develop an advertisement for a product and purposefully choose a product around the interests of the student with ASD. Finally, educators and paraprofessionals might increase student involvement in inclusive service-learning and extracurricular activities where they connect to peers around shared interests (Carter, Swedeen, & Moss, 2012).

Intervention Approaches Focused on Schoolwide Changes

Most social-related intervention approaches described in the literature thus far have focused primarily on improving outcomes for individual students or small groups of students. However, substantially enhancing the opportunities and supports all students with ASD should have to develop those skills, knowledge, and relationships that contribute to social success may require broader schoolwide efforts (Carter et al., 2014). The policies and practices of secondary schools shape the extent to which promoting relationships is considered either a complementary or a competing priority with promoting academic achievement and college readiness. The structures of these schools dictate the extent to which students with and without ASD spend time together in the same classrooms, hallways, cafeterias, and extracurricular activities. And the leadership and culture of a school shape whether and how commitments to inclusion, diversity, and other values permeate educational practice. However, efforts to shift service delivery at the secondary level can be slow and few studies offer clear guidance on the most promising pathways for undertaking such efforts (Ryndak, Reardon, Benner, & Ward, 2007). Nevertheless, investments in such schoolwide efforts are important to ensuring the effectiveness and long-term sustainability of individual-level interventions.

Schoolwide disability awareness efforts have also been advocated as one avenue for creating a more socially supportive environment for students with disabilities (Campbell & Barger, 2011; Moore & Nettelbeck, 2013). Lindsay and Edwards (2013) systematically reviewed more than 42 studies of disability awareness programs and found that many demonstrated some impact on students' knowledge about, attitudes toward, and/or acceptance of their peers with disabilities. However, few of these programs have been evaluated within secondary schools and none have focused specifically on promoting awareness related to ASD. A key finding within this literature is that informational content must be coupled with actual contact to produce real changes in social relationships outcomes.

Given the vital role of sustained social contact in any intervention effort, formal schoolwide peer partner programs (e.g., peer buddy programs, peer mentoring) can provide opportunities for a larger number of students within a school to meet and get to know their schoolmates with ASD and other disabilities. According to Wagner, Newman, Cameto, Levine, and Marder (2003), more than 40% of secondary schools nationally report offering some form of peer-mediated program for students. Although not always (or even often) focused on the needs of students with ASD, well-developed programs can circumvent structural and programmatic barriers within schools that make it hard for students with and without disabilities to get to know one another (Hughes & Carter, 2008).

Intervention Approaches to Engage Families

Although much is now known about strategies for improving the quality of interactions among students with and without ASD during school, there is little evidence to date that the peer relationships these adolescents develop extend beyond the school day or last across multiple semesters. Families represent an important—but largely unexplored—factor affecting the extent to which the impact of social competence and peer relationship interventions generalizes beyond the boundaries of the school (Schreiber, 2011). Parental expectations related to social participation and friendship formation can influence the opportunities they provide their children with ASD to participate in shared activities with peers after school, on the weekends, and during the summer months. Family resources can affect the degree to which students have access to transportation, technology (e.g., computer access, cell phones), or other supports needed to connect with peers outside school. And family priorities can affect the extent to which social-related goals are embedded within Individualized Education Program (IEP) and transition plans. For students with ASD who have limited expressive communication, strengthening school–family communication pathways can ensure that parents are informed about friendships developed in school and any upcoming school events in which their children might participate, as well as be able to provide input on what information should (e.g., particular strengths, interests, and background) and should not (e.g., confidential information) be shared with peers about their children.

Although this article emphasizes school-based intervention efforts, families can also play an active role in teaching and/or reinforcing skills associated with greater social competence in the home (Schreiber, 2011). Providing educational opportunities to families on how best to promote acquisition and use of these social-related skills may have collateral benefits of increasing parents' sense of self-efficacy and reducing overall stress (Schultz, Schmidt, & Stichter, 2011). Although studies have not yet examined home–school collaborative practices in relation to social skills interventions for youth with ASD, previous clinic-based interventions have successfully incorporated families as partners. For example, the *PEERS Program* (Laugeson et al., 2012) and *Social Competence Intervention–Parent* program (Schultz, Stichter, Herzog, McGhee, & Lierheimer, 2012) offered parent education programs concurrent to student-focused social competence interventions. Parents learned about information and strategies needed to support their children's social development outside of the setting in which adolescents received the intervention. Another

approach may be to ensure that parents know about the specific skills students are learning as part of school-based interventions so that they can support use of newly acquired social skills in the home (e.g., Duncan & Klinger, 2010).

Recommendations for Research and Practice

Creating educational contexts in which adolescents with ASD have meaningful opportunities to develop skills, knowledge, attitudes, and relationships that enhance their social competence and overall well-being is challenging work. This challenge is perhaps, in part, what underlies the paucity of research conducted at the secondary level to date. Developing, implementing, and evaluating evidence-based interventions focused on the social dimension of the lives of students with ASD require a multifaceted approach. Prior studies have largely reflected a more narrow approach to intervention, addressing just one or two of the pathways described previously in this article. Because multiple factors usually coalesce to make developing social competence and peer relationships such a challenge in secondary schools, students with ASD may benefit the most when educators adopt a comprehensive approach to intervention that simultaneously addresses building student competence, equipping peers, reconceptualizing adult roles, creating supportive school cultures, and engaging families more actively. Focusing narrowly on any particular pathway to the exclusion of others overlooks the ways in which skills, supports, opportunities, and expectations all interact to help or hinder peer relationships and social development (Carter et al., 2014). Therefore, we offer the following suggestions as possible directions for enhancing the impact of future intervention efforts.

First, this article provides an overview of several promising points of intervention for students with ASD in secondary settings. However, each intervention will need to be differentiated to meet the multifaceted needs of each individual student. At present, the literature base is somewhat sparse on this issue and more research is needed to provide guidance on which interventions work the best for different students with particular needs. Therefore, more research on social-related interventions within secondary settings is needed to document how intervention approaches may vary across populations of students with varying levels of functioning.

Second, the breadth of on- and off-campus settings in which adolescents with ASD spend their educational day raises important questions about where social-focused interventions should be delivered and by whom. An already crowded secondary curriculum leaves little room for stand-alone interventions, and generalization is typically enhanced when students learn and practice social-related skills in context (Bellini et al., 2007). Creatively integrating these social-focused intervention strategies within ongoing classroom, extracurricular, and community-based activities may be one key to enhancing their relevance, impact, and sustainability. Intervention approaches that engage peers and families may be especially impactful in providing students with ASD skill opportunities that are socially valid and meaningful. In doing so, however, school teams should reflect carefully on the roles various staff (e.g., paraprofessionals, related service providers, general educators, special educators) will play in delivering these interventions, as well as the professional development and support each will need to do so effectively. Within the extant literature, most interventions have been delivered by (or with intensive support from) researchers. This footnote highlights the need for more exploration of how best to equip practitioners to implement these strategies well in everyday schools.

Third, expertise on the social culture of a particular school clearly lies with peers. Adolescents are intimately familiar with what makes someone fit in (or stand out) within a particular peer group, they know where and how students enjoy spending time together in a community, and they have unique insights into how best to invite and involve other students to participate in those intervention approaches adopted by the school. Not only should peers be involved in interventions that focus on peers but also play an active role in developing interventions focused on schoolwide change. Incorporating the ideas and feedback of students into the design and delivery of social-focused interventions, as well as schoolwide disability awareness, holds particular promise for ensuring the acceptability and social validity of selected strategies. For example, some studies have documented the experiences of peers within peer-focused interventions at the conclusion of the program; however, few have incorporated such input in the earlier stages when intervention configurations are being determined (Copeland et al., 2004; Hughes et al., 2001).

Fourth, the emergence of new technologies is continuously changing how and where adolescents stay connected to one another. Moreover, the increasing accessibility of technology is providing more students with expressive language difficulties a reliable means of communication. These new technologies introduce compelling new vehicles for teaching social-related skills (e.g., video modeling, interactive applications), expanding available communication modes (e.g., speech-generating software), and facilitating social connections (e.g., texting, email, social networking). Integrating these new opportunities for students to connect and communicate can support multiple pathways to intervention. In addition, technology use may serve as a potential outcome of social competence interventions (e.g., increases in messages exchanged before and after participation in a peer-mediated support intervention). Identifying ways of harnessing this technology in effective ways warrants much more attention.

Finally, this area of research and practice is fraught with important measurement challenges that must be addressed. At present, few social-related assessment tools and planning approaches are specifically designed for use with adolescents along the entire autism spectrum. Capturing the full breadth of changes that may be associated with social-focused interventions is also difficult. Most studies have focused on capturing improvements in discrete skills (e.g., initiations, eye gaze) and interaction patterns (social interactions, reciprocity; for example, Carter et al., 2010). Much less is known about whether and how the intervention pathways described in this article transform students' self-perceptions, social status, peer affiliations, friendship quality, and quality of life. Indeed, the changes that matter the most are inevitably the most challenging to capture. And this is particularly true in the area of social competence interventions.

Conclusion

Social competence sets the occasion for and develops within relationships with peers. Recognizing the critical contributions each can make to success during and after high school, educators must find effective and feasible avenues for meeting the social-related needs of adolescents with ASD. Addressing these multifaceted needs well, however, will require a multifaceted approach that integrates student-, peer-, educator-, school-, and family-focused intervention strategies within comprehensive intervention efforts.

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