



# Socialization and Social Skills Programs for Autistic People Across the Lifespan

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Autism spectrum disorder (ASD) is classified as a neurodevelopmental disability with two main clusters of symptoms. To meet diagnostic criteria for ASD, individuals must demonstrate deficits in social communication and restricted, repetitive behaviors or interests that began in early development (APA, 2013). The phrase “if you’ve met one person with autism, then you’ve met one person with autism” captures the understanding that ASD is a heterogeneous diagnosis and individuals experience varied challenges when engaging with others and their environment (Masi et al., 2017). Despite the nature of ASD as a spectrum, support needs of various levels are present for most autistic individuals (Fombonne, 2003; Lai & Weiss, 2017). While all individuals diagnosed with ASD experience some degree of repetitive behaviors or interests, hallmark features of autism related to socialization (i.e., differences in social-emotional reciprocity, nonverbal communicative behaviors, and developing, maintaining, and understanding relationships) are widely present in the autistic community. These differences in socialization are considered by many to be defining characteristics of autism, often resulting in challenges with reciprocal social interaction (Pelphrey et al., 2011; Laushey & Heflin, 2000).

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Other areas related to social behaviors that are common in the autism spectrum include challenges related to language within a social context (i.e., pragmatic language). Many autistic children and adults may demonstrate differences in their communication for a social purpose or have difficulty adjusting their conversations for different contexts (Tager-Flusberg et al., 2005). Social challenges in ASD often persist throughout the lifespan but present differently as social, executive functioning, and independence demands shift.

Early social communication differences are often evident in preverbal infants who may later be diagnosed with ASD. Reliable ASD diagnosis in children by 18–24 months of age often relies on behavioral and communication markers, though socialization differences may be evident in infants 12 months and younger (Dawson et al., 2023). A common observable difference in infants who are later diagnosed with ASD is attention. Infants who are later diagnosed with ASD often demonstrate reduced attention to faces and speech, which are essential for early social development. The diminished focus on social cues likely contributes to social challenges later in life (Chang et al., 2021; Dawson et al., 2005). Language development differences have also been noted in infants and young children who are later diagnosed with ASD. Infants later diagnosed with ASD were shown to have delays in producing canonical babbling (i.e., syllables

with a consonant and a vowel) in their first year of life (Yankowitz et al., 2022). Similarly, children at risk of developing ASD often have delays in both expressive and receptive language skills in their first 3 years of life when compared to their typically developing (TD) peers (Garrido et al., 2017).

Early signs of ASD in infants and young children also include differences in imaginative play and gesture use. Infants and young children rely on play skills such as imitation for early learning and socializing. Young children and infants on the autism spectrum often have delays in gesture use and imitation, which could affect their ability to engage with their peers and learn social behaviors from their caregivers (Mundy, 2018). Similarly, many young children on the autism spectrum may prefer repetitive or sensory play as opposed to imaginative play (e.g., using a stick as a pretend sword), which could lead to difficulty engaging and developing meaningful relationships with TD peers who engage in imaginative play (Kent et al., 2020).

As children on the autism spectrum grow and rely more on verbal communication, the social demands of their environment change along with the social challenges many individuals diagnosed with ASD face. For example, as children enter middle and high school, they typically engage in less play and more conversation (Chevallier et al., 2012). As language develops, teens and adults on the autism spectrum may struggle with social language skills such as initiating and maintaining conversations, conversational turn-taking, understanding sarcasm and other nonliteral language, and contextual modulation of communication (Volden & Phillips, 2010). These social challenges in ASD do not typically improve with age and maturity and may even become more pronounced as the social environment of adolescents and adults becomes increasingly demanding and complex (White et al., 2007). Adolescents on the autism spectrum may exhibit poor social communication in the form of one-sided conversations in which they may focus on their specific topics of interest and have difficulty engaging with varied conversational topics. Additionally, due to challenges with reading social cues, some

individuals diagnosed with ASD tend to be excessively detailed in conversations related to their interests with peers (Elder et al., 2006). This difficulty with initiating and participating in reciprocal two-way conversations makes trading information and finding common interests with same-age peers challenging for many adolescents and adults on the autism spectrum (Laugeson & Frankel, 2010). Consequently, adolescents and adults on the autism spectrum may have difficulty in forming meaningful connections with their peers as friendships are often based on common interests (Laugeson & Frankel, 2010). Some individuals on the autism spectrum are known to have an atypical pattern of speech and sound somewhat robotic or pedantic (professor-like) in their manner of speaking. Atypical patterns of speech may be addressed most appropriately through speech and language therapy services. Arguably, hyper-verbosity and one-sided conversations are more fittingly targeted in social skills programs (SSP) as they impact the relational aspects of communication (Laugeson & Ellingsen, 2014). Differences in social interaction in ASD, while not inherently “wrong,” can contribute to forms of peer rejection and peer neglect, ultimately leading to potentially serious negative outcomes later in life (Laugeson & Frankel, 2010).

While a review of outcome studies for autistic adults found that measures of cognition and language improved from childhood to adulthood, social functioning continued to be an area of challenge for many adults on the autism spectrum (Magiati et al., 2014). Consequently, many social challenges persist throughout the lifespan and may lead to negative outcomes. Rates of mental health concerns such as anxiety and depression are higher for autistic adolescents when compared to their neurotypical counterparts (Rosen et al., 2018). These overall higher rates of mental health challenges in those diagnosed with ASD may relate to their overall tendency to have fewer friends than their neurotypical peers (Lai et al., 2019).

Depression is one of the most common psychiatric concerns in children, with overall prevalence estimates being around 12% of adolescents

in the general population (Merikangas et al., 2010). Strikingly, autistic adolescents are much more likely to experience depression than adolescents who are not on the autism spectrum, with estimates up to 26% (DeFilippis, 2018). Similarly, anxiety appears to be a common experience among many individuals diagnosed with ASD (Hymas et al., 2022). As autism is a spectrum, there are likely differences in rates of depression and anxiety depending on individual support needs. For instance, evidence suggests that depressive symptoms may be especially high for individuals on the autism spectrum who have lower support needs (Lieb & Bohnert, 2017). This increased rate is likely due to a few factors. First, individuals with lower support needs might experience increased social expectations when compared to those with higher support needs. They may be viewed as “odd” by their peers rather than having a visible disability, leading to peer rejection. Second, individuals who have fewer support needs generally have greater awareness of their social difficulties. Noticing peer rejection can lead to or exacerbate mental health concerns such as anxiety and depression (Sterling et al., 2008; Mayes et al., 2011). While neurotypical teens with depression report overall reduced rates of symptoms into adulthood (Fernandez Castelao & Kröner-Herzig, 2013), adolescents on the autism spectrum who experience depression report similar or even elevated rates of depression well into adulthood (Shtayermman, 2007; Gotham et al., 2014).

Mental health challenges, although prominent, are not the only area of life impacted by differences in socialization among autistic individuals. A meta-regression analysis conducted recently shows that socialization factors related to autism may be consistent factors impacting the overall quality of life for autistic individuals, beyond cognitive ability and other factors related to autism symptom severity (Kim & Bottema-Beutel, 2019). Additionally, challenges to the overall academic achievement of autistic students from preschool through college are predicted by social skills (Miller et al., 2017; Nasamran et al., 2017). Autistic adults seeking employment may also experience social challenges as a barrier

(Harmuth et al., 2018). Social challenges may also impact some autistic individuals’ ability to successfully pursue romantic relationships. Notably, some social differences among autistic individuals may be perceived by others as inappropriate in courtship situations. As an example, due to difficulty reading social cues, some autistic individuals may engage in behaviors that resemble stalking or harassment due to misread or overall missed social cues (Stokes et al., 2007; Mogavero & Hsu, 2020).

With such widespread social differences and related challenges with mental health, education, and employment, it is important to consider areas of support. Social skills programs (SSP) were developed as one such area of support. Moreover, the need for effective, evidence-based SSP as a method to enhance socialization for autistic individuals is evident.

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## **Underlying Theories of Social Skills Programs**

There is no consensus on the exact operational definition of social skills programs (SSP). SSP vary on both methods of teaching and theoretical underpinnings. While methods vary, the overall goal of SSP is to improve the quality of life for individuals interested in learning social skills. The specific “social skills” may vary depending on the overall target of specific programs (e.g., employment, dating, friendship); however, a general definition is that social skills are learned behaviors considered to be widely “socially acceptable.” The goal of targeting social skills is to increase the likelihood of positive and reinforcing social interactions for individuals desiring success in various social domains (Little et al., 2017). For many neurotypical individuals, social skills appear to be learned through indirect or implicit processes. In lieu of formal methods of instruction, neurotypical children seem to observe and practice social skills with adults as well as their peers, the latter of which is often done through play (Lynch & Simpson, 2010). While neurotypical individuals do not often receive formalized SSP, they do receive explicit

teaching of social skills from caregivers and other adult mentors (Lynch & Simpson, 2010). Many incorrectly assume that social skills are taught and learned in childhood. While both implicit and explicit learning of social skills certainly begin in childhood and earlier, social skills are lifelong, often depending on the context of such skills (e.g., shifting social demands from educational settings to employment). While social challenges related to ASD contribute to the acquisition of social skills, it is important to note that a host of other factors contribute to social skills differences among autistic and neurotypical individuals. That is to say, challenges with social skills may occur due to difficulty learning and acquiring the skills themselves and/or due to altered performance of said skills because of factors such as anxiety or impulsivity (Gresham, 1997; Keifer et al., 2020).

While we will discuss differences in SSP, they generally seek to enhance social skills by targeting social behavior. As an umbrella term, “social behavior” has been conceptualized as consisting of four dimensions: social communication, social cognition, social awareness, and social engagement/motivation (Constantino & Gruber, 2012). Autistic individuals vary in their social challenges, but many differences in social behavior may be observed in autistic individuals across the lifespan. While challenges may exist in each dimension of social behavior, due to the spectrum nature of ASD, the need for social supports may evolve throughout the varied social demands of developmental stages (Moody & Laugeson, 2022).

## Social Communication

As the name suggests, “social communication” can be defined as any behavior that serves a communicative purpose. Notably, social communication encompasses both verbal and nonverbal behaviors and includes responses to a communication partner as well as initiations of socialization. Overall, one may understand social communication in two parts: knowing what to

say and how to say it. For instance, SSP targeting social communication could focus on responding to conversations on topic or understanding social norms to target the “knowing what to say” aspect. They may also include feedback on tone and facial expressions to target the “how to say it” aspect of social communication. One of the hallmark features of ASD is differences in social communication (Bishop et al., 2016). These differences vary between individuals but may include features such as differences in speech prosody (i.e., rate, volume, stress/emphasis, and phrasing; Shriberg et al., 2001). For example, an observational analysis of role-play conversations demonstrated that autistic individuals were overall less fluid in conversational speech. Moreover, autistic participants were rated as asking fewer questions of their conversation partner. Nonverbally, differences in social communication were noted as less integrated eye contact and more demonstrations of inappropriate or flat affect (Morrison et al., 2017). Another common difference in social communication for those on the autism spectrum is difficulty interpreting and responding to nonliteral language (e.g., metaphors, sarcasm, figurative language; Kalandadze et al., 2018).

Many other social communication differences may result in social challenges throughout the lifespan for autistic individuals. Important social skills such as conflict resolution, peer and workplace interactions, deepening relationships, topic initiation and maintenance, and general knowledge of social norms have been demonstrated to be areas of difficulty for many on the autism spectrum well into adulthood (Sperry & Mesibov, 2005). For children and teens on the autism spectrum, such social communication differences can contribute to social challenges. For instance, “policing” behaviors due to a preference to follow rules (e.g., reporting a classmate for breaking a minor rule) can exacerbate or contribute to peer rejection (Laugeson & Frankel, 2010). Due to the widespread nature of social communication differences and the social challenges, they may contribute to for autistic individuals, they are a common component of many SSP.

## Social Cognition

Social cognition is a widely used term to refer to the ability to perceive the internal states and intentions of others (i.e., thoughts and emotions). Much research related to autism and social behavior lies in social cognition. Specifically, the theory of mind has been well-studied in autism research. Simply stated, theory of mind is a technical term for perspective taking. Autistic individuals have been shown to have an overall more difficult time perceiving the thoughts, intentions, and emotions of others. These differences in social cognition in autistic populations appear to vary from neurotypical populations more than other cognitive abilities, such as memory and attention (Velikonja et al., 2019). Differences in social cognition are present throughout the lifespan for those diagnosed with ASD. Social cognition differences in autistic youth are often observable by age 2 (if not earlier), with many autistic children exhibiting difficulty understanding the goals and desires of others, or even understanding that another person can have different beliefs. Identifying situations in which they or others have said something inappropriate (i.e., a faux pas) may also be a challenge for autistic individuals (Aschersleben et al., 2008; Stone et al., 1998), further complicating social dynamics. Although differences in social cognition may persist throughout the lifespan (Pagni et al., 2020), some research suggests that differences in theory of mind abilities between autistic and neurotypical individuals decrease with age, particularly in middle and later adulthood (Lever & Geurts, 2016).

Evidence further demonstrates that there is an overall difference in social cognition related to empathy in autistic populations (Baron-Cohen et al., 2001). While differences are common for individuals diagnosed with ASD, a distinction in the type of empathy experienced by autistic individuals is important. While differences in cognitive empathy, or the ability to infer the mental states of others, appear to be less developed in autistic individuals overall, research suggests little difference in emotional empathy when comparing autistic and neurotypical populations

(Smith, 2009). These results suggest that although autistic individuals may struggle to fully identify and understand the emotional states of others, they often experience concern and sympathy for others at a similar level to neurotypical individuals.

Because autistic individuals often experience differences in theory of mind, they may be more vulnerable to being taken advantage of. For example, autistic teens may struggle to identify when others say something they do not believe, leading to an increased likelihood of victimization or bullying. Persistent into adulthood, misreading of intentions and social cues paired with theory of mind challenges can lead to unintentionally inappropriate social advances when choosing friends and romantic relationships (e.g., pseudo-stalking of people of interest), as well as difficulty interpreting nonresponses (Stokes et al., 2007). While sometimes serious, inappropriate social behaviors of autistic individuals are generally considered to be unintentional and due in large part to misinterpreting or misreading social cues (Mintah & Parlow, 2018). While empathy is a difficult skill to learn, many SSP target social cognition—and more specifically, theory of mind skills—through techniques such as perspective-taking questions (Laugeson, 2014, 2017). Because of unintended social faux pas and the consequences therein, social cognition is often an important target for social skills acquisition.

## Social Awareness

Skills such as picking up on social cues and broad awareness of the visual and auditory information in a social landscape fall under “social awareness.” As with the other dimensions of social behavior, social awareness tends to be an area of difficulty for many individuals on the autism spectrum. Consistent findings related to social awareness demonstrate differences among autistic individuals when compared to neurotypical peers. For instance, autistic individuals often feel uncomfortable with eye contact in social situations and thus avert their gaze. Because of the

aversion to eye contact, those on the autism spectrum may demonstrate decreased attention to and recognition of social stimuli such as people and faces (Chevallier et al., 2013). Even when attention is focused on social stimuli such as faces or people, some evidence suggests autistic individuals may still process social information differently (Zürcher et al., 2013). Social awareness ability often directly impacts other skills, such as social cognition. For instance, in order to interpret social behavior (i.e., social cognition), one must first accurately and quickly perceive sensory input (e.g., changes in facial expressions, body language; Fletcher-Watson et al., 2009).

Throughout the lifespan, differences in social awareness can have an impact on the relationships and social interactions of those on the autism spectrum. For autistic children, understanding implicit social cues (e.g., boredom in a playmate or a lack of interest from a conversational partner) may lead to social neglect. In adulthood, those on the autism spectrum may struggle with social awareness in conversation (e.g., missing social cues that a conversation partner would like to speak). These differences in social awareness can result in autistic individuals appearing “oblivious” to their social world, leading to some social difficulties. Social awareness is a component of many SSP, where the focus may be on assisting those with social awareness difficulties in interpreting behavioral signs (e.g., shifts in facial expressions and body language).

## Social Engagement and Motivation

Perhaps one of the most common misconceptions related to autism and socialization is that autistic individuals do not desire social interaction or relationships. Counter to this theory, anecdotal clinical observations, research backing, and most importantly—the perspectives of autistic individuals themselves—support the idea that most if not all individuals on the autism spectrum desire socialization and relationships (Black et al., 2024). Furthermore, the general popularity of SSP among the autistic community demonstrates the desire for social engagement and an overall

motivation to enhance socialization and relationship satisfaction. Therefore, it is not a “lack of interest” in social engagement that appears to be an underlying factor in ASD, but rather challenges with social skills being barriers to engagement (Kapp et al., 2019).

Although most evidence points to a desire for socialization, the preferences for such social engagement vary between autistic and neurotypical samples. For instance, some autistic individuals reported desiring social interactions with other adults on the autism spectrum, while neurotypical peers demonstrated a preference for other neurotypical adults (Morrison et al., 2020). This notable difference may be related to the factors autistic individuals rated important in friendships: acceptance of atypical behavior and common interests—factors more likely to be present in other neurodivergent individuals (Sosnowy et al., 2019). Furthermore, although autistic individuals socialize about the same amount as neurotypical peers, differences emerge with whom they interact. Neurotypical individuals tend to split time socializing between family members and others within their social network, whereas autistic individuals may focus more time socializing with their family members (Hintzen et al., 2010). This difference is likely because autistic individuals are more motivated in social situations where they feel comfortable and accepted (i.e., with family members) than with less familiar and accepting social contexts (Chen et al., 2015).

Unlike the other components of social behavior, direct focus on social motivation is not a typical target of SSP. The consensus among researchers, clinicians, and autistic advocates is that forcing the learning of social skills on someone is an unethical practice (Laugeson & Frankel, 2010; Laugeson, 2014, 2017). The decision to participate in SSP should be that of the individual participating in such programming. As such, social motivation must be intrinsic to effectively learn social skills, and the focus of SSP should be on enhancing social opportunities in lieu of coercing participants to engage in social interactions they are uninterested in.

## Role of Neurodiversity in SSP

The medical model of ASD and other developmental disabilities has historically led practitioners, educators, and society at large to view differences as deficits. This antiquated view of neurodivergent individuals has led to an ignorance and misunderstanding of the individual strengths autistic individuals have and ultimately perpetuates stereotypes, hindering research progress (Kapp, 2019). The previous sections of this chapter cover social communication differences characteristic of ASD. Shifting perspectives view these social differences as a communication mismatch rather than a communication deficit. It was noted that many individuals on the autism spectrum prefer to engage with others on the spectrum and report higher levels of disclosure to neurodivergent peers when compared to neurotypical conversation partners (Morrison et al., 2020). With a deeper understanding of autistic experiences, the neurodiversity movement seeks to focus on the strengths of autistic individuals rather than trying to “cure” autism. Even so, many autistic and neurodivergent advocates recognize challenges common among autistic individuals and support programming, including SSP, to improve life quality and social interactions (especially with neurotypical peers) while also celebrating neurodiversity (Lai et al., 2020).

With a neurodiversity framework, SSP can be delivered in an ethical and supportive manner. While the efficacy of SSP to help autistic individuals meet their social goals will be discussed in this chapter, it is important to note that they should not be aimed at “fixing” perceived “deficits.” That is to say, those who participate in SSP should be intrinsically motivated to participate and learn skills. Likewise, providers and educators should promote the idea that the use of specific social strategies is a choice. With autonomy to use the skills taught in SSP (or not), neurodivergent individuals can build on their self-advocacy skills and build social connections with which they feel comfortable and satisfied. Furthermore, SSP can utilize instructional content specific to self-advocacy, including boundary-setting, disclosing a diagnosis, and

how to request accommodations. By including affirming self-advocacy topics and general social skills in the curriculum, participants of SSP can learn how to navigate the neurotypical social landscape while also educating and advocating for a world in which their differences will be appreciated and celebrated fully.

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## Early Childhood SSP

Most SSP rely at least in part on functional verbal communication (i.e., participants must have developed receptive and expressive language). While many autistic children are identified and receive diagnoses before the age of 2, participation in SSP is often considered inappropriate until verbal language develops. Not every program requires expressive language; however, even nonverbal social skills, such as reading social cues and gestures, require direct instruction. Because of direct instruction methods using language, some autistic children may not participate in some SSP. Some programs do provide services before children develop functional language skills by modeling social communication targets and using principles of reinforcement. These programs that are available for autistic children focus on naturalistic interaction and are fittingly categorized as naturalistic developmental behavioral interventions (NDBIs; Schreibman et al., 2015). Overall, NDBIs aim to promote social learning and shape social behavior in a naturalistic setting. An emphasis of NDBIs is to follow a child’s lead in play activities to promote joint engagement and to model social communication (e.g., gestures, words) while reinforcing attempts at social communication (Frost et al., 2020). NDBIs are not strictly considered SSP in the sense that they have other targets (e.g., language development, emotion regulation, learning readiness). Meta-analytic evidence does support NDBIs as generally effective for early social functioning skills such as social responsiveness, social engagement, and play skills (Tiede & Walton, 2019). The research supporting NDBIs and their efficacy is widespread. While too numerous to fully explore in the current chapter,

programs such as Joint Attention, Symbolic Play, Engagement and Regulation (JASPER; Kasari et al., 2006), and the Early Start Denver Model (ESDM; Dawson et al., 2010) are shown to be effective supports for pre-verbal autistic children and their families.

Despite a demonstrated need for rigorous evidence-based SSP for young autistic children with verbal language skills, most studies to date have investigated programs using a single-subject experimental design (Goldstein et al., 2014). Anecdotal evidence from such studies is bolstered by reviews of SSP for young children in which SSP are shown to be efficacious for teaching social skills (Goldstein et al., 2014; Hansen et al., 2014; Gunning et al., 2018). Common themes from SSP programs designed for the age range of around 3–6 years include elements of visual supports, social rules/scripts, and generalization of skills through involvement with similar-age peers (Hansen et al., 2014).

Evidence from larger pre-post group designs supports the successful findings from smaller studies. One such SSP with research backing is the Program for the Education and Enrichment of Relational Skills (PEERS®) for Preschoolers (Laugeson et al., 2025; Park et al., 2020). PEERS® for Preschoolers is an SSP for 4- to 6-year-olds that utilizes play-based methods such as familiar children's games (e.g., Musical Chairs, Duck, Duck, Goose) and mock playdates to practice targeted skills, including turn-taking and asking to play. The program also uses engaging methods of instruction, such as puppet shows, to model developmentally appropriate social skills. While preschoolers are learning social skills, parents engage in a concurrent session focused on teaching targeted social skills, psychoeducation, and social coaching techniques (i.e., how to reinforce learned skills with their child). Numerous studies have shown promise in improving the social relationships of young autistic children using the PEERS® for Preschoolers program (Park et al., 2020; Factor et al., 2022a, 2023; Antezana et al., 2023; Tripathi et al., 2024). Additionally, parents report significant long-term improvement with sustained gains of social skills for their children years following the completion of the program (Tripathi et al., 2022).

Much like PEERS® for Preschoolers, an SSP based on the TEACCH model utilizes concurrent child and parent groups to teach social skills (Ichikawa et al., 2013). The TEACCH-based SSP has been tested in Japan and focuses on emotion recognition and concrete skills such as asking for help and greeting others. While moderate effect sizes were observed in an RCT of the TEACCH-based SSP, suggesting efficacy compared to a control group, statistical significance was a limitation of the study, with only 11 participants (Ichikawa et al., 2013). Findings from this program support the feasibility of a larger study examining the efficacy of the TEACCH-based SSP.

As demonstrated in the PEERS® for Preschoolers format, modeling of social skills can be an effective tool for SSP for young autistic children. Another example of the technique was demonstrated in an RCT for an SSP for 4- to 6-year-olds who were taught social skills through video models of appropriate skills. In the RCT, the children who participated in the program showed greater improvements in social skills than the control group. Specifically, children who participated in the group demonstrated skills such as initiating conversations, responding, and interacting in general when compared to the participants of the study who did not receive the SSP (Kroeger et al., 2007).

Another common component of many SSP for young children is peer modeling. For example, an RCT of an SSP for kindergartners and first graders used skills practice with neurotypical peers as a way to practice learned skills. In addition to skills practice with peers, participants were provided a didactic lesson and feedback from the group leader. When compared to typical services offered through Individualized Education Plans (IEPs), children in the SSP demonstrated larger improvements in social skills (Kamps et al., 2014).

While these programs hold promise, a paucity of literature exists for SSP for young autistic children relative to that of NDBIs. Although many programs are being developed and tested, RCTs demonstrating the success of SSP across research settings are lacking. With the existing evidence supporting programs for young autistic children

and a demonstrated need for such programs, future research in this area and with this population is warranted.

## School-Age SSP

Overall, SSP for school-age children are well studied in comparison to SSP for young children (e.g., Wolstencroft et al., 2018). Even so, few programs for school-age autistic children are accessible in the sense that they are not widely disseminated with program manuals for schools and providers (Rodda & Estes, 2018). In general, SSP are shown to be effective for teaching social skills to autistic school-age children (Gates et al., 2017). Of the SSP that exist, many utilize a combination of techniques to enhance interaction/play skills, conversational skills, emotion recognition, body boundaries, and joining/asking to play (Moody & Laugeson, 2020).

One example of an evidence-based program for autistic children is Children's Friendship Training (CFT; Frankel et al., 2010). CFT was developed to be used with a broad range of children with social struggles. Like many of the programs mentioned previously, CFT also utilizes weekly concurrent parent and child groups to teach social skills. Specifically for autistic children, an RCT found improvements in participants' social skills, reduced loneliness, and greater engagement in playdates (Frankel et al., 2010; Ellipse Goh et al., 2020). Longitudinal data of CFT found that graduates were likely to form close friendships following participation in the program (Mandelberg et al., 2014a).

Even more robust empirical support exists for various programs based on the Skillstreaming protocol (McGinnis & Goldstein, 1997). The general approach of Skillstreaming involves teaching, modeling, role-playing, providing feedback, and generalizing learning. The program has been adapted and tested in a variety of formats for school-age autistic children, including summer camp, school-based programs, and outpatient formats. The SummerMAX program is one such format developed from the Skillstreaming protocol (Lopata et al., 2013). SummerMAX is

run as a summer camp where social skills are learned over 5 weeks for 5 h/day on weekdays. Skills are taught in a didactic format with practice related specifically to the taught social skills (e.g., cooperative activities, decoding nonliteral language). Teaching strategies used in other SSP are also present in the SummerMAX program, including modeling, role-playing, reinforcement, and coach feedback. Although SummerMAX does not have a concurrent parent session as with many SSP, parents remain involved through weekly 90-min training sessions (Thomeer et al., 2019). Results from the SummerMAX program have been promising. Significant positive effects of the program were observed by both parents and staff of the program, with social skills and adaptive functioning skills being rated significantly higher following the program compared to before the start (Lopata et al., 2008).

Replication studies have bolstered the initial positive findings, with the SummerMAX program demonstrating improvement in targeted areas such as knowledge of content and performance on measures of pragmatic language and facial emotion recognition. Parent and staff reports also continue to show improvement in areas related to social skills (Thomeer et al., 2012). Furthermore, maintenance of skills has been observed and the efficacy of the SummerMAX program has been expanded and tested in school and outpatient settings (Lopata et al., 2017, 2018).

While SSP for school-age children, such as CFT and SummerMAX/Skillstreaming, are relatively well-tested and replicated with RCTs, other such programs have comparatively less rigorous vetting. Several programs are worth noting due to their promise and inclusion of evidence-based teaching methods. For instance, the Superheroes Social Skills Program (Jenson et al., 2011) utilizes techniques that have been demonstrated to be successful in many other SSP (i.e., didactic lessons, behavioral rehearsals, *in vivo* performance feedback). Superheroes Social Skills focuses on the use of animated superheroes to model social skills and engage children while incorporating video modeling and neurotypical peer inclusion in a school-based setting. While

there has yet to be an RCT testing the efficacy of the program, single-subject designs demonstrate promise for both school-age children and preschoolers (Radley et al., 2016, 2017).

Fairly unique among SSP for school-aged neurodivergent children is the Multimodal Anxiety and Social Skills Intervention (MASSI; White et al., 2010). Because of the demonstrated co-prevalence of anxiety and social challenges, MASSI includes common cognitive-behavioral techniques (e.g., exposures, problem-solving, cognitive model) in addition to social skills topics (e.g., conversational skills, initiating interaction with peers). The format of the program includes individual therapy and parent education in addition to the common small group format that many SSP utilize. While an RCT of autistic participants demonstrated the effectiveness of MASSI for increasing social responsiveness (SRS-2), anxiety was not demonstrated to be significantly reduced for participants of MASSI versus the comparison group (White et al., 2013).

In sum, the evidence base for SSP for school-age children is promising if not understudied. The list of programs mentioned in this section is far from exhaustive. Many programs show potential and are deserving of further study. The SSP that have the strongest evidence to date appear to share similarities in many of the teaching techniques and topics (e.g., play and conversational skills, emotion recognition), suggesting these as important areas of focus for SSP for school-age children.

## Adolescent SSP

Adolescence is a pivotal time for relationship and independence building. Teens typically begin to explore their own identities during adolescence and start to form relationships with increasingly less assistance from their parents. Friendships formed before and during adolescence become critical to development, especially considering the importance of the quality of friendships and peer acceptance as predictors of future adjustment (Waldrup et al., 2008). With the demonstrated importance of close friendships in

adolescence, it is key to promote social skills as an option for neurodivergent teens looking to develop their social skills and bolster interaction with their peers. As with SSP for school-age children, those developed for adolescents have varied levels of support. A recent examination of some prominent SSP for adolescents found that social outcomes were generally improved with participation in evidence-based SSP (as rated by parent and self-report measures; Afsharnejad et al., 2023). Many programs are focused on assisting neurodivergent teens and others with social challenges in developing social skills; however, the two programs with the most numerous and compelling research support will be highlighted in this section.

KONTAKT® is an SSP that was originally validated in a German sample (Herbrecht et al., 2009) and has since been adapted culturally for use in Sweden and Australia (Choque Olsson et al., 2017; Afsharnejad et al., 2022). The program has empirical support for use in both autistic school-age and adolescent populations. KONTAKT® relies on common principles of evidence-based SSP, such as using a group format, generalization exercises, and behavioral rehearsals (Moody & Laugeson, 2020). Skills taught in the program include peer initiation, nonverbal communication, problem-solving, and psychoeducation related to autism. While the program has been validated and tested in a variety of session lengths (12, 16, and 24), evidence demonstrates larger effects within increased sessions, although adolescents participating in KONTAKT® in any format generally improved in their social responsiveness, social goals, and adaptive behavior among other improvements (Afsharnejad et al., 2022; Choque Olsson et al., 2017; Jonsson et al., 2018).

KONTAKT® demonstrates a strength in its research support in that many of the RCTs that have been conducted have relatively large sample sizes (e.g.,  $n = 296$ ; Choque Olsson et al., 2017). This is especially impressive considering that few SSP have any RCTs and those that do tend to have much smaller sample sizes (Wolstencroft et al., 2018). These larger sample sizes and the qualitative support from participants, parents,

and teachers (Leifler et al., 2022) highlight both the generalizability of the program and the confidence of its participants. Support for the use of an adapted form of KONTAKT® in a school-based setting (SKOLKONTAKT®) further suggests its utility in settings where adolescents socialize and form connections. The school-based adaptation utilizes teachers rather than trained clinicians but demonstrated promising gains in social skills in an initial feasibility study (Fridell et al., 2023). It is worth noting that although recent initial evidence is in support of the school-based adaptation, there has not yet been an RCT to show widespread efficacy.

To date, the most widely researched and supported SSP for neurodivergent youth is the Program for the Education and Enrichment of Relational Skills (PEERS®) for Adolescents (Laugeson & Frankel, 2011; Laugeson, 2014). PEERS® for Adolescents is a manualized program that utilizes evidence-based methods of teaching social skills focused on making and keeping friends and handling conflict and rejection. Skills taught in PEERS® for Adolescents are considered ecologically valid (i.e., generalizable to real-life situations). The program targets skills that are considered critical for autistic adolescents (Laugeson & Ellingsen, 2014):

- Reciprocity in conversation to develop closer, meaningful relationships.
- Promoting skills to expand the adolescent's social network (e.g., finding a source of accepting peers).
- Demonstrating steps for changing a reputation if adolescents are interested.
- Instructing on socially helpful methods of peer interactions to increase the quality of interactions.
- Skills related to managing peer rejection and conflict (e.g., how to handle various forms of bullying).
- Enhancing understanding of verbal and non-verbal social cues through concrete behavioral feedback.
- Utilizing perspective-taking questions to improve emotion recognition and social cognition.

- Practicing strategies for emotion regulation in order to handle social conflict, rejection, and frustration.

Specifically, PEERS® for Adolescents includes topics such as conversational skills, peer entry, humor, electronic communication, get-togethers, good sportsmanship, entering and exiting conversations, and handling various forms of conflict (e.g., disagreements, handling bullying).

Part of what makes PEERS® for Adolescents so effective is the format in which it is presented. Two concurrent groups occur: one group for adolescents in which they are taught and practice concrete, socially helpful skills, and a caregiver group, in which parents are taught the same skills in addition to receiving instruction on how to provide social coaching to their adolescents using the skills. Multiple RCTs conducted by the developers of the program demonstrate gains in social skills across various measures. These overall improvements include increased overall social skills, improved social responsiveness, improved social knowledge, and an overall increase in monthly hosted get-togethers with peers (Laugeson et al., 2009). Much like the KONTAKT® program, PEERS® for Adolescents has been linguistically and cross-culturally adapted and replicated for autistic adolescents in numerous countries outside of the United States including Hong Kong, Isreal, South Korea, Japan, China, Canada, Thailand, Taiwan, Iceland, the Netherlands, Italy, Pakistan, and Poland (Yoo et al., 2014; Shum et al., 2019; Rabin et al., 2018; Yamada et al., 2020; Zu et al., 2020, 2022; Marchica & D'Amico, 2016; Sittanomai et al., 2021; Hsiao et al., 2024; Karlsdottir et al., 2022; Idris et al., 2022; Fatta et al., 2024; Saima & Amin, 2023; Płatos et al., 2022). To date, the program has been translated into over a dozen languages and is used in over 150 countries. The cultural adaptations to the KONTAKT® and PEERS® for Adolescents programs are particularly notable among SSP, considering that the vast majority of SSP have solely been tested in North America and Europe with primarily white populations (Davenport et al., 2018). Since some components of social skills are reliant on cultural

norms, it is important to consider cultural factors when adapting social skills programs.

Empirical support for PEERS® for Adolescents is robust, with meta-analytic findings indicating medium to large effect sizes in targeted outcomes including social responsiveness, social skills, knowledge of social skills, and social engagement (i.e., number of get-togethers; Zheng et al., 2021). The increase in the number of get-togethers among teens is noteworthy, as these types of interactions represent larger social changes for teens and mark peer acceptance. Support for the original 14-week format and a 16-week school-based daily lesson format suggests generalizability of the skills regardless of outpatient versus educational setting (Laugeson & Frankel, 2010; Laugeson, 2014). The generalizability of the skills taught in PEERS® for Adolescents was also highlighted in a study measuring the effectiveness of telehealth delivery, where gains in social skills and other measures were shown to be similar to those of in-person groups (Estabillo et al., 2022; Adler et al., 2022). A long-term follow-up study of PEERS® for Adolescents shows the continued maintenance of skill gain 1–5 years following program completion, which emphasizes the importance of parents as social coaches to continue reinforcing skills learned in the program (Mandelberg et al., 2014b). Indeed, a meta-analysis of SSPs supports the idea that programs containing parent training in addition to groups for adolescents tend to be more effective than adolescent programming alone (Wolstencroft et al., 2018).

## Adult SSP

As with most areas of autism research, studies involving SSP for adults are limited in comparison to other age groups. An ASD research portfolio analysis report published by the Office of Autism Research Coordination disclosed that only 2% of funding for autism research in the United States is directed to adult services (Shattuck et al., 2020). While often diagnosed in childhood, ASD is marked by social differences that are present throughout the lifespan. As with

the transition from childhood to adolescence, autistic individuals face increased and shifting social demands as they become adults, including increased expectations of independence, educational and employment demands, and the possibility of new life milestones (e.g., romantic relationships, marriage, and parenting). Because the social demands shift, the content and structure of SSP must also be adapted to be effective for neurodivergent adult populations.

A recent meta-analysis of SSP designed for young adults found overall efficacy of programs with regard to social responsiveness (Dubreucq et al., 2022). Of particular note among adult-focused SSP, PEERS® for Young Adults (Laugeson, 2017) demonstrated the strongest evidence of efficacy. The PEERS® for Young Adults program was adapted from the PEERS® for Adolescents program and follows a similar format. Methods of instruction are consistent with the PEERS® for Adolescents program and include didactic instruction, modeling of skills through role-play demonstrations, and individualized feedback while engaging in behavioral rehearsals of skills. The program also includes a concurrent social coaching component to enhance and generalize the skills taught in the program. While the program utilizes similar teaching methods and much of the same content from the PEERS® for Adolescents program (e.g., conflict resolution, conversational skills), the PEERS® for Young Adults program emphasizes social skills more specific to adults (i.e., dating skills, relationship boundaries; Laugeson, 2017). To date, the PEERS® for Young Adults program has been proven effective in five separate RCTs conducted by the program developer and other researchers. All five RCTs demonstrated gains in the social outcomes targeted by the program including overall social skills, social responsiveness, empathy, social engagement, and social skills knowledge, as well as reduction in loneliness at the completion of the program (Laugeson et al., 2015; McVey et al., 2016; Chien et al., 2021; Oh et al., 2021). While not a direct focus of the program, PEERS® for Young Adults has also been shown to improve the mental health of participants (Factor et al., 2022b).

While the PEERS® for Young Adults program is focused primarily on the skills related to making and keeping friends, other SSP for adults on the autism spectrum focus on teaching social skills specific to other adult-specific social domains (e.g., dating, college/university success, employment). It is important to consider SSP focused on these areas as they are critical for the development of independence and social success of many neurodivergent adults.

Despite a desire to develop and maintain romantic relationships, many autistic adults face challenges to dating success, including inappropriate dating behaviors (Stokes et al., 2007). To date, only one SSP has been identified as being focused on dating skills for autistic adults (Exell et al., 2022). Ready for Love is a program adapted from the Relationship Enhancement (RE) intervention, which is rooted in couples counseling (Cunningham et al., 2016). The Ready for Love adaptations of RE followed the original design of psychoeducation and brief therapy but included supplemental modules on flirting, asking someone on a date, and assessing interest. Notably, the supplemented topics were selected based on an RCT of a PEERS® for Young Adults (Gantman et al., 2012). While participants in the Ready for Love program did show increases in empathy, social responsiveness, and social skills related to dating, there were no significant differences between RE and the adapted Ready for Love program (Cunningham et al., 2016).

In addition to engaging in romantic relationships, gaining meaningful employment is another major goal of many young adults on the autism spectrum. Because finding, obtaining, and maintaining employment requires social skills related to interviewing and interacting with colleagues, the development of SSP targeting these specific skills has been at the forefront of programmatic research for autistic adults. Even so, there remains a lack of well-studied SSP dedicated to employment (Baker-Ericzén et al., 2022). Traditionally, employment programs for autistic adults have been focused on job-specific “hard skills,” that require very little interaction with others, such as photocopying, folding clothes, using a washing machine, and sorting mail (Walsh et al., 2014).

While these skills are important in specific jobs, previous SSP have typically failed to focus on general communication skills that are essential for gaining and maintaining employment (e.g., soft skills).

Some employment programs have begun to include “soft skills” related to social interaction and employment. For example, Project SEARCH Plus ASD Supports (PS + ASD) included job coaching, skills training, and didactic instruction on workplace communication in addition to hard skills learned through internship experiences (Wehman et al., 2014). PS + ASD was taught in an educational setting where students participated in 90-min daily lessons on topics such as accepting feedback, greeting coworkers, emotion regulation, interacting with customers, professionalism, resumes, and interviewing skills. Students practiced skills and were provided feedback from their job coaches and internship supervisors. Overall, an RCT showed significant increases in the rate of employment for students in the PS + ASD program when compared to traditional high school programs (Wehman et al., 2017).

While the combination of PS + ASD work experience and internships with soft skills (e.g., communication, interaction, socializing) was shown to be effective in Project SEARCH, programs focused solely on the soft skills are likely more widely feasible due to cost effectiveness and reduced labor/time demands. Recently, several pilot studies of various programs have demonstrated the initial efficacy of SSP for adults focused on the soft skills of employment, including networking, teamwork skills, professionalism, interviewing, and navigating coworker interactions. These recently studied programs include Assistive Soft Skills and Employment Training (ASSET; Sung et al., 2019), Job-Based Social Skills Program (JOBSS; Gorenstein et al., 2020), PEERS® for Careers (Moody et al., 2022), Acquiring Career, Coping, Executive control, Social Skills (ACCESS; Oswald et al., 2018), and Supported Employment, Comprehensive Cognitive Enhancement, and Social Skills (SUCCESS; Baker-Ericzén et al., 2018). While there has been some variability among programs,

each pilot study found relative success on some of their outcome measures and high levels of satisfaction reported from the autistic adults who participated. Notably, nearly half of the participants in the JOBSS program made gains in employment 6 months after its conclusion (Gorenstein et al., 2020).

Overall, SSP for adults on the autism spectrum show promise but have yet to be rigorously studied using randomization and larger samples. Thus, it is important that these programs undergo replication studies to determine efficacy in helping autistic and neurodivergent adults in gaining and maintaining successful employment.

In sum, studies examining the efficacy of SSP for autistic adults are somewhat sparse and generally under-funded in the scope of autism research. Many of the programs that do exist are focused on social skills related to friendships, romantic relationships, and/or navigating the social landscape of employment. Clearly, continued research attention should be focused on developing a strong evidence base for SSP for adults on the autism spectrum.

## Future Directions

As demonstrated throughout this chapter, SSP can be an effective method of enhancing interactions with others, learning conflict resolution skills, and practicing skills related to dating and employment. Traditional frameworks of SSP have focused on adapting the behavior of autistic individuals to suit the neurotypical social world (Leadbitter et al., 2021). While this can be a strategy some neurodivergent individuals may find useful, future SSP may consider adopting a more neuroinclusive framework. For example, including content on self-advocacy may increase confidence in social interactions. Furthermore, by empowering autistic individuals to engage with others and disclose their differences, they may become positive representations of what autism “looks like.” Indeed, research suggests that contact with minoritized groups (such as neurodiver-

gent individuals) typically reduces prejudice (Paluck et al., 2019).

Another important direction of SSP is to consider the diverse array of identities encompassed in the autistic experience. When undergoing research, many SSP recruit samples based primarily on the presence of an autism diagnosis. This may be necessary in order to receive funding; however, future SSP should consider intersectionality in their content and design. Autistic individuals exist in every demographic and have a wide variety of characteristics related to their age, sexual orientation, gender identity (SOGI), ethnic/racial identity, and many other factors too numerous to fully mention. Despite this vast diversity, most currently available SSP were developed and validated for individuals under the age of 25 and included disproportionately large numbers of White males (Ogawa et al., 2021; Davenport et al., 2018). Likewise, although autistic individuals are much more likely to hold LGBTQIA+ (Hall et al., 2020) identities, there has yet to be an SSP devoted to working with autistic individuals in minoritized SOGI groups.

Finally, programs focused on neuroinclusivity and acceptance would significantly advance the field. Creating SSP that promotes neuroinclusivity and acceptance is essential for fostering equitable opportunities in key areas of life, such as friendships, dating, and employment. SSP should not only teach practical skills tailored to the diverse needs of neurodivergent individuals but also emphasize the value of embracing different communication styles, perspectives, and social behaviors among all. By shifting the focus from conformity to mutual understanding and respect, SSP have the potential to empower neurodivergent individuals to build meaningful connections and participate fully in society. Additionally, SSP that seek to embrace neuroinclusivity would contribute to dismantling stigma and creating environments where diversity is celebrated, paving the way for genuine inclusivity in both personal relationships and professional settings.

## Conclusion

In conclusion, SSP have utility across the lifespan for enhancing the social interactions of autistic children and adults with some substantial supporting evidence. Although the framework for understanding social “challenges” versus social “differences” is shifting to become increasingly neuroinclusive, SSP continue to be a useful option for many neurodivergent individuals to improve their quality of life. The options for evidence-based SSP have improved in the past decades, but there is still much to uncover about how best to implement these programs and how to ensure they reflect the values of the autistic community and do not perpetuate stereotypes or masking. Researchers and practitioners must be aware of shifting social and cultural norms when developing and testing future SSP to ensure that autistic individuals have the opportunity to thrive and to help society celebrate neurodiversity.

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