



Contents lists available at ScienceDirect

Research in Autism Spectrum Disorders

journal homepage: www.elsevier.com/locate/rasd

Improving the assertive conversational skills of adolescents with autism spectrum disorder in a natural context



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ARTICLE INFO

Number of reviews completed is 2

Keywords:

Peer-mediated intervention
Autism
Adolescents
High-school
Conversation skills

ABSTRACT

Background: With the increased demand for social conversation in high school settings, difficulties with pragmatics, or the use of language in social situations, can leave adolescents with Autism Spectrum Disorder (ASD) socially isolated from their peers. Extending previous research, this study examined the effects of a multicomponent peer-mediated intervention (PMI) implemented during lunch on improving the assertive conversational skills (initiating, asking follow-up questions, and commenting) of four passive communicators with ASD.

Method: A nonconcurrent multiple baseline design across participants was used to evaluate the combined effects of peer training and focus student instruction on the use of text cues for improving conversation with trained network peers. Text cues for initiations were faded, and probes for generalization with novel peers were made.

Results: Results revealed increases in the adolescents' ability to initiate, ask-follow-up questions, participate more in conversation acts, and engage in longer on-topic conversations with trained peers. Total assertive acts, including the use of comments to maintain conversation, substantially increased for three of the four adolescents at rates comparable to their peers. Conversational gains generalized in probes with novel peers and social validity measures attested to the intervention acceptability and conversation quality.

Conclusions: This study provides additional evidence that PMI can be structured to produce robust changes in the conversational skills of adolescents with ASD in a natural social context.

1. Introduction

As individuals with autism spectrum disorder (ASD) reach adolescence, their use of spoken language in social situations takes on critical importance. In high school and in later adult life, social interaction with peers revolves around conversation (Carter et al., 2014). Yet, due to difficulties with pragmatics, adolescents with ASD often struggle with the increased demand for social conversation, increasing their risk for social isolation and peer rejection (Locke, Ishijima, Kasari, & London, 2010).

Conversational difficulties for this population typically center around topic information and topic management (i.e., introducing and maintaining topics of conversation), and reciprocity (i.e., engaging in the back and forth of conversation) (Paul, Orlovski, Marcinko, & Volkmar, 2009). Specific difficulties include low rates of assertive or unsolicited communication acts such as initiations, follow-up questions, and topic related comments; poor responsiveness to partner's cues or direct solicitations; use of irrelevant detail;

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inappropriate topic shifts; semantically vague or unrelated responses; and topic perseveration (Jones & Schwartz, 2009; Paul et al., 2009). These conversational difficulties can vary widely across individuals, requiring individualized interventions to address specific pragmatic concerns. For example, passive conversationalists who respond to their partner's questions, but who rarely initiate and or use assertive acts to maintain conversation, may require a different intervention than overly talkative individuals who dominate conversations and ignore their partner's communications (Fey, 1986).

Despite the need for intervention, comprehensive reviews consistently reveal a dearth of social communication research for this age group (e.g., Carmargo et al., 2014; Reichow & Volkmar, 2010). Peer-mediated intervention (PMI) is one approach that holds strong promise for addressing the conversational needs of adolescents with ASD in high school settings as it has emerged as an evidence-based practice for producing a range of social outcomes for individuals with ASD (Wong et al., 2015). In addition, PMI is an inherently flexible approach that can be tailored to meet the specific conversational needs of individuals or subgroups of individuals sharing similar conversational profiles. Most importantly, PMI involves typical peers and intervenes directly in natural settings. Because appropriate pragmatic functioning is defined by social contexts (Simmons, Paul, & Volkmar, 2014), intervention is best applied during naturally occurring opportunities when and where skills are needed.

PMI research directed toward improving the conversational skills of individuals with ASD in educational settings represents a small subset of studies within the larger evidence base for PMIs (Chan et al., 2009; Watkins et al., 2015). PMI studies measuring conversational outcomes have typically employed a multicomponent intervention combining peer training to facilitate and prompt communicative interactions, with direct instruction on the use of graphic or written text cues for the student with ASD to elicit specific communication targets. Across studies, clear effects for a multicomponent PMI have been found for increasing total communication acts, initiations, use of specific conversational skills (e.g., requests, comments), and cross-setting generalization for some conversation targets by elementary and middle school children with ASD (Ganz et al., 2012; Kamps, Mason et al., 2014; Kamps, Thiemann-Bourque et al., 2014; Mason et al., 2014; Thiemann & Goldstein, 2004). Given the complexity of conversation, evidence also supports using a multicomponent intervention for maximizing outcomes because neither peer training nor direct student instruction may be sufficiently effective alone (Goldstein, Schneider, & Thiemann, 2007). For example, in a study involving five elementary-age boys with ASD, Thiemann and Goldstein (2004) found that teaching peers facilitative strategies to support conversation resulted in increased communication acts (i.e., initiations and responses) between the boys and their peers. However, the boys' use of targeted skills (i.e., commenting, complimenting, and requesting) did not improve until peer training was combined with direct instruction with the boys on how to use text cues for the skills. Along with providing support for a multicomponent approach, this study illustrates the importance of tailoring PMI to address specific language targets.

PMI studies targeting improvements in the general social interactions of high school students with ASD are emerging (e.g., Sreckovic, Hume, & Able, 2017). However, only a few studies have focused specifically on improving social conversation. Hughes et al. (2000, 2011, 2013), used communication books to encourage conversations between students with ASD and typical peers. Students with ASD were taught to use the conversation books to initiate, and peers were taught to support and maintain interaction by expanding on-topics, asking reciprocal questions, and prompting initiations as needed. Findings revealed increased conversational interaction with peers in general education settings; however, conversations were limited by the structure and repeated topics of the communication books. Additionally, because no specific communication acts beyond initiations and responses were measured, it is unknown whether the intervention impacted the students' use of specific skills (e.g., comments, follow-up questions) to maintain conversations.

Using a multiple baseline design across participants, Bambara, Cole, Kunsch, Tsai, and Ayad (2016) evaluated the effects of a PMI to improve the conversational assertiveness of three high school students with ASD who were passive communicators. Network peers were taught to implement three strategies to (a) support conversational interactions, (b) promote initiations, and (c) promote follow-up questions made by the focus students with ASD during lunchtime conversations in the high school cafeteria. Additionally, focus students with ASD were taught to use written text cue cards to initiate conversation, which incorporated self-generated topics for conversation, and to ask follow-up questions to maintain conversational interactions. Results revealed substantial improvements in the focus students' conversational abilities including an increase in total conversation acts, increased frequencies of initiations and follow-up questions, and longer conversational interactions with network peers. Further, the intervention also collaterally increased the focus students' use of comments to maintain interaction which, when combined with increases in initiations and follow-up questions, resulted in the once passive communicators becoming more assertive conversationalists.

In summary, cumulative research documents that PMIs can effectively improve the conversational skills of individuals with ASD, but more research is needed to extend interventions for adolescents in high school settings and refine interventions to address specific conversational difficulties. To address this gap, the present study served to replicate and extend Bambara, Cole et al. (2016) in order to evaluate the effectiveness of PMI on improving the assertive conversational skills of high school students with ASD. This study differed from the Bambara, Cole et al. study in several ways. First, this study examined focus student unprompted conversation acts and revised definitions of target conversation acts to more precisely capture topic change and topic related-responses. Second, peer conversation acts were measured to assist with the interpretation of focus student outcomes. Third, this study examined fading written text cues for initiations and streamlined peer training by introducing two strategies (i.e., strategies to support conversation and promote initiations) in one training component or phase. Finally, generalization of focus student outcomes was examined by conducting post training probes with novel peers.

Specific research questions included (a) Will the PMI result in increased focus student initiations, follow-up questions, total number of conversation acts, and longer on-topic conversations with network peers? (b) What collateral impact will the PMI have on focus student use of topic related comments and total frequency of all assertive acts (i.e., initiations + follow-up questions + comments)? (c) Will focus student gains generalize to conversations with novel peers outside of their peer network? (d) How do the focus

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