

Soft skills for success for job seekers with autism spectrum disorder

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Abstract.

BACKGROUND: Direct Skills Teaching (DST) is a method for distilling a skill into digestible components for ease of teaching and learning of a new skill. Job retention is a complex phenomenon requiring numerous social competencies that include verbal and non-verbal fluency among others. Individuals with Autism Spectrum Disorder (ASD) often struggle with social communication and therefore are at a disadvantage in employment settings; even when otherwise qualified for the position.

OBJECTIVE: This preliminary pilot study tested the feasibility of a DST group intervention to assist individuals with ASD with work-related soft skills, with a particular focus on informal conversational skills.

METHODS: Eight master's level Rehabilitation Counseling students facilitated groups of adults with autism spectrum disorder seeking employment. Student facilitators followed the *Conversing with Others* manualized curriculum, designed to teach workplace based informal conversational soft skills. Participant feedback was sought both pre and post intervention, and student facilitators recorded their observations of each group session.

RESULTS: The initial findings support the feasibility of soft-skills training for work-related conversational skills teaching for job seekers with ASD. The results also supported the need for significant adjustments to the intervention as well as any future studies of the small group intervention *Conversing with Others*.

CONCLUSIONS: Workplace conversational skills can be facilitated in a small group setting. Master's level counselors-in-training, were able to follow a manualized DST soft-skills small group.

Keywords: Autism spectrum disorder, employment, soft skills, direct skills teaching, conversational skills

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1. Introduction

For over thirty years, the incidence of autism spectrum disorder (ASD) diagnosis has increased significantly, and this is projected to continue into the

foreseeable future. Dietz et al. (2020) reported that approximately 1.5 million children aged 3–17 in the United States are diagnosed with ASD, while approximately 2.21% (5,437,988) of U.S. adults aged 18 and older have ASD. Unemployment rates for individuals with ASD range between 11% and 55% (Meeks et al., 2015). As rates of ASD increase, the number of work-aged adults with ASD struggling to gain employment will also grow. In part, these rates are due to the unique challenges faced by persons with ASD (McVey et al., 2016; Sung et al., 2019).

For young adults with ASD in particular, they face challenges to securing and retaining employment, and are therefore less likely to become employed compared to their same-aged peers (Shattuck et al., 2012; Sung et al., 2019; Westbrook et al., 2013). Transition age youth with ASD and their need for assistance when trying to obtain and keep employment while transitioning to adulthood have been a public concern. The Workforce Innovation and Opportunity Act (WIOA) emphasizes providing youth and students with disabilities with services such as employment services [WIOA, section 7(37) and §361.5(c) (51)]. In this act, youth with disabilities include those in the ages of 14 to 24, regardless if the individual is attending an educational program [WIOA, section 7(42), and §361.5(c) (58)]. This act requires that state vocational rehabilitation (VR) agencies set aside at least 15% of funds from Federal VR programs in order to provide pre-employment transition services that would assist students with disabilities in transitioning from secondary to postsecondary education programs and also help them obtain and keep competitive integrated employment.

Despite the low employment rate, work is important for persons with ASD. Employment promotes personal dignity which has been demonstrated to improve overall quality of life (Hendricks, 2010). Numerous research studies have supported the importance of employment for individuals with disabilities (Lindsay et al., 2018; Henry et al., 2014; Huang & Chen, 2015). Individuals with ASD should be provided with equal rights and entitlements, enabling them to earn wages necessary to support themselves and pursue their interests. For individuals with ASD, increased employment provides a number of economic advantages and improves overall cognitive performance (Hendricks, 2010). Once individuals with ASD demonstrate work-related skills, employers often begin to value their strengths including trustworthiness, reliability and low absenteeism (Hendricks, 2010).

1.1. Work-related soft skills

Work success requires an assortment of skills and social placidity. Social and communication skills, such as conversing with others, have been documented as needing improvement for individuals with ASD (Howlin & Moss, 2012; McVey et al., 2016; Sung et al., 2019). Descriptions of the core features of ASD accentuate social communication difficulties and atypical and repetitive sensory-motor behaviors (APA, 2013; Lord et al., 2018). Difficulties with expressive and receptive language for individuals with ASD often create barriers to obtaining employment.

Persons with ASD often need assistance with developing a set of social interactional skills that include social graces, interpersonal, emotional, problem-solving and adaptive skills, also known as “soft skills” (Grugulis & Vincent, 2009). Compared to “soft skills” on the job, “hard-skills” are confined to the essential functions of a particular job (Kyllonen, 2013). Soft skills correlate closely with overall job satisfaction (Kyllonen, 2013). Skill development in areas that increase job satisfaction is, therefore significant, since participation in meaningful employment is associated with improvement of overall functioning of people with disabilities (Stephens et al., 2005).

Employability is also impacted by an understanding and adherence to socially acceptable topics for informal conversation as well as the more formal aspects of job-related communication. Avoidance of certain taboo subjects such as religion, sex, and politics is important to not only interactions with co-workers, but also to employer assessment of employee self-control and management. Studies have consistently demonstrated that difficulties with soft skills and social norms in the workplace impact job-tenure (Kyllonen, 2013).

Although soft skills are critical to acquisition and retention of gainful employment for individuals with ASD, they remain lifelong challenges for individuals with ASD (Connor et al., 2020; Howlin & Moss, 2012). Researchers recommend that an important element of job preparation for individuals with ASD must include job-related “soft skills” training (Duncan & Dunifon, 2012). Connor et al. (2020) focused on work-related social skills training designed for individuals diagnosed with ASD and revealed they require additional training towards finding a job, keeping a job as well as acquiring the social skills training as a specific need by this population.

Soft skills can be acquired and therefore taught (Riggio & Tan, 2013). Once mastered, they have the potential to significantly impact the job tenure of otherwise qualified employees with ASD. Literature has reported success with group-based soft skills training for young adults with ASD, specifically the UCLA PEERS® Approach (Laugeson et al., 2015; McVey et al., 2016) and the Assistive Soft Skills and Employment Training (ASSET) work-related soft skills intervention (Sung et al., 2019). The UCLA PEERS® Approach primarily focused on social skills training related to initiating and maintaining friendships and romantic relationships/dating, however it also extends to navigating bullying in the workplace as well as conflict resolution (Laugeson et al., 2015). The feasibility of utilizing the PEERS® approach in a practice setting was not reported in Laugeson et al. (2015) and McVey et al. (2016).

The ASSET intervention focused on areas such as communication/networking, attitude, teamwork, problem-solving/critical thinking, and professionalism, while incorporating ASD-specific structured-learning approach (Sung et al., 2019). Sung et al. (2019) found acceptable feasibility for the ASSET intervention based upon based feasibility upon program demands, overall satisfaction, and responsiveness to the group process. A majority of ASSET participants reported acceptable group size and program demands (Sung et al., 2019). Clark et al. (2019) implemented an intervention (UPGRADE Your Performance) among four high school students with disabilities including one diagnosed with ASD and found improvements in soft skills, performance, self-monitoring, and skills generalization. Similarly, others have implemented group based social and vocational skills interventions and noted improvement in skills knowledge, social functioning, and job interview performance (Hillier et al., 2007; Morgan et al., 2014; Sung et al., 2019). Van Laarhoven et al. (2012) even integrated video modeling procedures, an evidence-based support for people with ASD, that showed increased independence in learning vocational tasks. The multitude of interventions and approaches are important foundations for the current study and the area of work-related soft skills for youth with ASD.

Importantly, efficacious work-related soft skills interventions are still needed for youth with ASD (Hillier et al., 2007). Additionally, among the most difficult work-related soft skills for individuals with ASD are coworker interactions (Van Laarhoven et al., 2012). The current intervention (*Conversing with*

Others) specifically focuses on workplace social situations, such as during lunchbreaks, to help workers socialize with their peers, colloquially referred to as “small talk” or “chit chat”. This skill includes choosing topics, demonstrating interest in what others are saying (verbally and non-verbally), changing a topic, and concluding the conversation. This skill can extend beyond the workplace, however the performance environment targeted as part of this curriculum was employment-related (Lu et al., 2020; Oursler et al., 2019).

Small talk is a form of communication solely dedicated to relationship building, rather than instrumental concerns or informational exchange (Coupland et al., 1992). Although seemingly trivial, it is a necessary part of workplace success and consists of greeting co-workers (Bullis & Bach, 1991), chatting before a meeting (Mirivel & Tracy, 2005) or short conversations throughout the workday (Fayard & Weeks, 2007). Topics of conversation in the workplace may include weather, weekend plans, television, and sports (Vitukevich, 2016). While small talk lacks important content, it is a necessary part of the typical workday and allows co-workers to build social connections (Molinsky, 2013). In fact, it is a social norm for co-workers to greet each other or make small talk before meetings.

Small talk involves adept use of informal forms of social interchange (Coupland, 2003) and, in effect, brings those engaged in this communication closer together (Kendon et al., 1975). Small talk makes up 1/3 of everyday conversations (King et al., 1995) and is a normative behavior in the workplace (Holmes, 2000), but its role in employment success has been undervalued. Kyllonen (2013) asserted that the ability to use small talk is a critical component in obtaining and retaining employment. Small talk positively impacts the tone of conversations, mood, group dynamics, and feelings of belongingness (Holmes, 2003; Huang et al., 2017; Sandstrom & Dunn, 2014). Despite this, many people consider small talk to be pointless (Brotheridge & Grandey, 2002), and inadvertently isolate themselves by avoiding chit-chat (Boothby et al., 2018). Small talk at work helps workers experience positive social emotions in the workplace, and therefore increases one’s organizational citizenship and positive mood at work (Methot et al., 2021). Additionally, small talk will facilitate the acquisition of work-related natural supports. Natural supports are on-the-job, non-professional, sources of support that occur naturally in the environment. These supports may include supervisors, but most

often this concept is associated with support that comes from co-workers (Institute for Community Inclusion, 2015). The acquisition of natural supports in the workplace has been established as an important part of employment success for people with disabilities (Institute for Community Inclusion, 2015). The soft skill of small talk, should therefore be a target skill in the enhancement of work-related skills training.

The current study aims to examine the feasibility of the *Conversing with Others*, DST approach to the skill of making conversation in the workplace for individuals with ASD. Feasibility studies are the logical first step in determining whether an intervention has the potential for *in vivo* application (Bowen et al., 2009). This study assessed the acceptability and the practicality of *Conversing with Others* with individuals with ASD including transition age youth (TAY) with ASD in the age range of 18-24. Specifically, acceptability refers to examining how the intended individual recipients, including participants and facilitators, respond to the intervention, whereas practicality explores the degree to which an intervention can be delivered within the constraints of resources, time, commitment (Bowen et al., 2009). This intervention was designed to address the vocational rehabilitation needs of individuals with a wide variety of disabilities (Lu et al., 2020). The feasibility of this intervention had not been previously established for persons with ASD.

2. Method

2.1. Participants

A total of 37 individuals with ASD participated in the DST small group intervention entitled *Conversing with Others*. Participants were recruited from three vocational rehabilitation agencies in a North-eastern state. All participants had a history of an ASD diagnosis; resided with their caregiver(s), and were able to read and write English. The 32 male and 5 female participants ranged in age from 16 to 55, had a high school education level on average, were engaged with supported employment programs, and voluntarily participated in the group intervention. One participant (2.7%) had a reported “intellectual impairment” and some reported co-occurring psychiatric (N = 13; 35.1%) and physical (N = 5; 13.5%) disabilities.

2.2. Procedure

Participants were recruited from various vocational rehabilitation agencies. Eligibility was ascertained via an interview to determine the following inclusionary criteria: participants must 1) be receiving services at the agency, 2) have a prior diagnosis of ASD, Autism, Asperger’s disorder, or pervasive developmental disorder not otherwise specified, 3) have social limitations as reported by either the individual or a caregiver, 4) read and write in English 5) be willing to participate in a soft skills training group, and 6) be verbally communicative. Exclusionary criteria included inability to read/write/speak English. Exclusions included individuals who did not have a previous diagnosis of ASD, Asperger’s syndrome or any pervasive developmental disorder that had not otherwise been specified and did not have a minimum second-grade reading level. Individuals with ASD who were non-verbal were excluded from this study, since at this stage in its development the intervention is designed to teach verbal conversational skills. This study received approval from the University’s Institutional Review Board.

2.3. Measures

Participant demographic and disability information was collected from agency records. Participants completed a questionnaire that measured their perceived readiness to engage in workplace informal conversation pre and post intervention (Oursler, n.d.). This paper and pencil questionnaire was used to elicit participant self-report of their perceptions of their conversational skill level (Oursler, n.d.). Cronbach’s Alpha for this 10-item scale was 0.56 in previous studies among 146 persons with various disabilities (Lu et al., 2020). The Cronbach’s Alpha for this scale was 0.54 in the current study among 37 participants with ASD. The validity information is unknown to this scale at this moment. The same questionnaire was used pre and post group. This 10-item survey used a five-point Likert scale (1 = “strongly disagree”; 2 = “disagree”; 3 = “neutral”; 4 = “agree”; 5 = “strongly agree”). Some sample questions included: “My co-workers are usually interested in the same things I am interested in”; and “Part of having a good conversation is being a good listener” (See Table 2).

As an ancillary to the pre- and post- questionnaire, participants also completed a satisfaction questionnaire following completion of the group intervention.

The satisfaction questionnaire requested information about various aspects of the group. Items included: (a) "The overall quality of the group was"; (b) "The instructor's knowledge of the subject was"; (c) "I think the information I received will be helpful to me on the job" and (d) "The group held my interest". The response options were rated on a five-point Likert scale from "strongly disagree" to "strongly agree." In addition, a final three-point Likert scale item stated, "I would recommend this group to a friend", with options of "no", "not sure", and "yes."

At times, accommodations were needed to allow the participants to complete the questionnaires effectively. If accommodations were necessary, group facilitators assessed participants' accommodation needs for participating in groups and completing survey questionnaires and provided them accordingly. Facilitators recorded the following accommodations/modifications: (a) extra time to explain group activities, for example, for the activity of expressing interest during a conversation, participants experienced difficulty with this skill component and required some extra assistance, specifically additional examples of expressing interest or more time to describe the components of the skill; (b) reading items aloud to the group or individual; and (c) providing individualized assistance/clarification with completing the homework or survey, which included one on one instruction during group procedures and additional instructions to clarify the aim of the homework/survey.

After each session, the group facilitators completed a standardized form that assessed group fidelity to the manual with a critical self-reflection of the session. These session notes recorded their overall impressions of the session, including both the successes and any observed issues or concerns. At group facilitation conclusion, facilitators completed a self-reflection assignment in which they shared their observations of the group and their growth as counselors-in-training. For the purpose of this study, the results of these facilitator observations were used to assess intervention feasibility and identify any future modifications to improve the overall effectiveness of the intervention.

2.4. Intervention

Groups were facilitated by 8 master's level rehabilitation counseling students participating in internships. The students had varying amounts of prior practical experience facilitating groups and completed a course in Group Methods, where they

learned basic counseling communication techniques, and the theory and basics of leading a group. Approximately seventy-five percent of student were between the ages of 23 to 30 while twenty-five percent of the students were between the ages of 31 and 50. Five of the students were White, one was Asian American, one was Hispanic American, and one was African American. Two of the group facilitators were males (25%) and four were females (75%). Each student facilitated one group. In total, there were eight groups.

As per the design of the intervention, minimal training for group facilitation of the DST group was provided. Group facilitators were provided a curriculum manual for leading the group which delineated materials needed for each session. The manual included handouts and/or forms needed, and detailed and structured "how to" instructions for leading the group. The group intervention consisted of four sessions that were 60 to 90 minutes in duration and was based on the ROPES (Review, Overview, Presentation, Exercises, and Summary) approach (Cohen et al., 1985), with specified recommended time intervals for each activity within a session. Index cards and a flip chart or blackboard were used to record major points. To promote participant retention, students were encouraged to take steps to ensure participation such as reminder calls, texts, and furnishing light refreshments.

The curriculum for *Conversing with Others* was based upon the Boston University's Direct Skill Teaching (DST) designed by Farkas and Anthony (2010). Direct Skills Teaching is part of the "Choose-Get-Keep" approach to assist clients with identifying desired roles of interest in their community. Skills training programs have received criticism for consigning learners to a reactive, rather than active role (Ellison et al., 2002; Shern et al., 2000). The DST approach, therefore, systematically utilizes basic educational, cognitive, and behavioral techniques to convey the knowledge needed to learn a skill, including providing a detailed lesson plan to teach component behaviors, and involving all participants in the practice and generalization of learned skills.

For this intervention, one critical skill was taught in a relatively brief time frame to facilitate success and satisfaction in a work setting. The aim was to focus on a specific skill instead of a variety of skills which may or may not be needed for success and satisfaction in the target environment. The curriculum covers the before, during, and after of conversing with others, specifically, planning for such conversations, introducing and sustaining them, and ending

them. Group exercises included group discussions, brief demonstrations of the skill, completion of worksheet exercises, and role play. The appendix details the content outline for this intervention.

2.5. Analysis

Prior to analytic procedures, examination of descriptive statistics and variable distribution was performed. Due to small sample size and feasibility focused research questions, nonparametric Wilcoxon signed ranked tests were used to test the simple treatment effects at each post-treatment assessment point. For open ended responses, two researchers independently reviewed open ended responses for their content, and common themes were reported.

3. Results

The demographic characteristics for participants are described in Table 1. Thirty seven individuals with ASD including 28 transition age youth (75.7%) participated in the DST small groups. Eighty-six percent of participants attended all group sessions. Group sessions were designed to be four sessions long delivered weekly or twice weekly.

Table 1
Demographic and diagnostic characteristics of the study sample
(N = 37)

| | N | % | |
|--------------------------|-------|-------|-------|
| Gender | | | |
| Male | 32 | 86.5 | |
| Female | 5 | 13.5 | |
| Age range | | | |
| Age 16–24 | 28 | 75.7 | |
| Age 25–55 | 9 | 24.3 | |
| Race/Ethnicity | | | |
| European American | 19 | 51.4 | |
| African American | 10 | 27.0 | |
| Hispanic | 5 | 13.5 | |
| Asian American | 3 | 8.1 | |
| Disability type | | | |
| Autism spectrum disorder | 37 | 100.0 | |
| Comorbid psychiatric | 13 | 35.1 | |
| Comorbid physical | 5 | 13.5 | |
| Comorbid learning | 1 | 2.7 | |
| Attended all sessions | 32 | 86.4 | |
| Currently working | 4 | 10.8 | |
| Ever employed | 12 | 32.4 | |
| | Mean | SD | Range |
| Age | 23.41 | 7.80 | 16–55 |
| Years of education | 12.35 | 1.65 | 8–16 |
| Years of employment | 1.24 | 2.40 | 0–10 |

The mean participant age was 23 years old with a majority of participants identifying as male ($n = 32$, 86.5%) while 13.5% ($n = 5$) were female. European Americans represented 51.4% ($n = 19$) of study participants, with African Americans comprising the second largest group ($n = 10$, 27.0%) of participants. Other participants identified as Hispanic American ($n = 5$, 13.5%) and Asian American ($n = 3$, 8.1%). All participants had developmental disabilities which in this study were ASD diagnoses. However, some reported psychiatric, physical, and learning disabilities in addition to the ASD diagnoses (Table 1). Overall, very few participants were currently competitively employed ($n = 4$, 10.8%).

Wilcoxon signed ranked tests were conducted to determine the changes in responses before and after the group intervention. Table 2 shows the significant findings for questions on the pre-post questionnaire related to the skill of conversing with others. Overall, only two items achieved statistical significance. For the behavior of choosing a topic for a conversation: “I can research topics to talk about during lunchtime”, there was a significant change post intervention ($z = -2.60$, $p = 0.01$). Similarly, for the behavior of demonstrating interest: “Part of having a good conversation is being a good listener,” participants endorsed greater understanding of the importance of listening ($z = -2.31$, $p = 0.02$).

Furthermore, participants reported satisfaction with the group intervention (Table 3). Over 90% of group participants reported “agree” or “strongly agree” to the following: “The overall quality of the group was good/excellent”; “The instructor’s knowledge of the subject was good/excellent”; “I think the information I received will be helpful to me on the job”; and “I feel confident that I can use the skill I learned in the group.” Over 75% of group participants reported “agree” or “strongly agree” to the following: “The group held my interest”; and “The number of sessions was about right”. Over 60% of participants would recommend the group to a friend, and 19.4% indicated that they would prefer more group sessions.

Open ended responses were also reviewed for their content, and common themes were reported. In response to the question “What did you like about the group?”, the following common themes emerged: (a) No response/Unspecified ($n = 20$; 54%); (b) Learning a new skill/information ($n = 12$; 32.4%); (c) Group exercises/activities ($n = 3$; 8.1%); (d) Interacting with group members ($n = 2$; 5.4%); and (d) Don’t know ($n = 2$; 5.4%).

Table 2
Wilcoxon signed ranked test for pre and post conversing with others questionnaire (N = 37)

| Questions | Pre-Group | | | Post-Group | | | Z | P |
|---|-----------|------|------|------------|------|------|--------|------|
| | N | M | SD | N | M | SD | | |
| 1) My coworkers are usually interested in the same things I am interested in | 36 | 3.50 | 0.97 | 32 | 3.22 | 0.97 | -0.91 | 0.37 |
| 2) My coworkers usually want to talk about the same things I want to talk about | 36 | 3.39 | 0.80 | 32 | 3.16 | 0.81 | -1.29 | 0.20 |
| 3) I can discuss anything I want at work, as long as it is lunchtime or on my break | 36 | 3.78 | 0.90 | 32 | 3.66 | 1.26 | -0.44 | 0.66 |
| 4) Work is the only topic we should discuss when we are at lunch with coworkers | 36 | 2.72 | 1.26 | 32 | 2.47 | 1.08 | -0.39 | 0.70 |
| 5) It is okay to tell jokes about other people in the room, as long as they can't hear me | 36 | 2.14 | 0.90 | 32 | 2.16 | 1.14 | -0.56 | 0.58 |
| 6) I can research topics to talk about during lunchtime | 36 | 3.36 | 0.83 | 32 | 3.88 | 0.79 | -2.60* | 0.01 |
| 7) When I have something really important to say, it is okay to interrupt my coworkers when they are having a conversation during lunchtime | 36 | 2.61 | 1.29 | 32 | 2.38 | 1.18 | -0.26 | 0.79 |
| 8) Once I start a conversation, I expect to spend the rest of the lunch period talking about my topic | 36 | 2.61 | 0.96 | 32 | 2.50 | 1.14 | -0.24 | 0.81 |
| 9) When I don't want to talk about a topic during lunch, I should get up and walk away in the middle of the conversation | 36 | 2.33 | 1.20 | 32 | 2.19 | 1.06 | -0.78 | 0.44 |
| 10) Part of having a good conversation is being a good listener | 36 | 4.44 | 0.77 | 32 | 4.78 | 0.42 | -2.31* | 0.02 |

Note. * $p < 0.05$; 1 = "strongly disagree"; 2 = "disagree"; 3 = "neutral"; 4 = "agree"; 5 = "strongly agree".

Table 3
Satisfaction survey (N = 37)

| | N | Valid Percent |
|---|----|---------------|
| The overall quality of the group was good/excellent | 30 | 96.7 |
| The instructor's knowledge was good/excellent | 29 | 93.6 |
| I think the information I received will be helpful to me on the job (<i>agree/strongly agree</i>) | 29 | 93.6 |
| The group held my interest (<i>agree/strongly agree</i>) | 27 | 87.1 |
| The number of sessions was about right | 24 | 77.4 |
| I feel confident that I can use the skill I learned in the group (<i>agree/strongly agree</i>) | 29 | 93.5 |
| I would recommend this group to a friend | 20 | 64.5 |

Note. 6 (19.4%) thought the number of sessions was not enough. They recommended more sessions.

When asked, "What would you change or improve about the group?" a review of responses revealed the following themes: (a) Nothing ($n = 30$; 81%); (b) Provide additional information about the skill/more specific curriculum ($n = 3$; 8.1%); and (c) Participants desiring to change their interactions with others/changing how interactions are facilitated during group ($n = 4$; 10.8%); and (d) Don't know ($n = 1$; 2.7%).

A review of responses to the question "What will you do differently as a result of attending the group?" revealed these common themes: (a) Nothing/No Response ($n = 24$; 64.8%); (b) Practice techniques

learned in group/Attempt to make conversations with others and socialize more ($n = 10$; 27%); (c) Don't know ($n = 2$; 5.4%); and (d) Be more punctual ($n = 1$; 2.7%).

Review of responses to the question, "What other information would it be helpful to include in the group?" included these themes: (a) No response/Nothing/Unspecified ($n = 24$; 64.8%); and (b) Adding more information about the topic ($n = 6$; 16.2%); (c) Don't know ($n = 4$; 10.8%); and (d) Including additional skills to use in work settings ($n = 3$; 8.1%).

Participants were asked if they had any other comments and review of their responses uncovered these common themes: (a) No response/No ($n = 33$; 89.1%); and (b) An overall positive appraisal of the group ($n = 4$; 10.8%).

Finally, each facilitator completed written reflections at the end of the groups. Input from the facilitator's perspectives was used to understand better issues or concerns with the group. Several facilitators provided similar observations that will inform future modifications to the intervention. Facilitators noted that many group participants did not complete the homework assigned between group sessions. In these cases, the facilitator used time in-session or added sessions to have participants complete their homework as these activities were required to move forward in the group curriculum. In addition, participants had difficulty with demonstrating interest in

others, and several facilitators needed to take extra time to provide additional instruction on this skill. These situations lengthened the duration of group sessions and, in some cases, increased the number of sessions of the group. As noted above, in several cases this four session curriculum went longer at eight sessions and in one case ran for ten sessions. Facilitators noted that for this population, a greater emphasis on the importance of the homework may be needed, and/or greater attention should be paid to ensuring that participants understood the homework directions. They noted, however, that when homework had been successfully completed by participants, these activities were helpful to participant learning. In addition, facilitators noted that participants enjoyed the role-play element of the group. In a couple of cases, the group facilitators observed that participants were making active attempts to practice the skills learned outside of the group setting. Several facilitators stressed the importance of pre-group preparation and that their agencies expressed a need for these types of groups.

4. Discussion

Since individuals with ASD encounter difficulties with social skills and communication (Laugeson et al., 2015; McVey et al., 2016; Sung et al., 2019), finding effective ways to help people with ASD develop proficiency with work-related soft skills to improve employment outcomes is therefore important. Our findings suggest that, although the group intervention led to positive changes, the results were not as robust as expected. Few items achieved significance, which suggests a need for improvement, possibly modification of the manual for this population and the evaluative items. Although the results were not as robust as hoped, it does appear that there was still usefulness to this type of intervention for unemployed youth with ASD.

While the quantitative results reported in Table 2 achieved statistical significance for some items, participants reported overwhelming satisfaction with the groups. Table 3 shows how participants appreciated the quality and usefulness of the group intervention. Given the positive reports for the evaluation items, it appears possible that the questionnaires could benefit from modifications.

For instance, when asked “What would you do differently as a result of attending the group?”, a participant responded “arrive to group on time,” which

certainly answers the questions; however, does not relate to the skill of conversing with others. Also noteworthy is that for the pre and post questionnaire, many responses averaged around “not sure,” which may further suggest the wording impacted participants’ responses to the questions. Rephrasing of situational questions in the pre/post questionnaire to provide a more direct scenario that an unemployed youth with ASD could understand and imagine might make the situation easier for the person with ASD to interpret. For example, in contrast to the question, “When I don’t want to talk about a topic during lunch, I should get up and walk away in the middle of the conversation,” the question could be rephrased to ask “During my lunch break, I can get up and walk away in the middle of a conversation because I don’t want to talk about a topic.”

4.1. Limitations

Since this was a pilot feasibility study, there were several limitations. The group leaders were not licensed practitioners in the field, they were graduate-level counselors-in-training. The students ran the groups to fulfill an internship experience, which may not represent the same level of counseling skills of counselors working in the field. Group facilitators placed reminder calls and offered refreshments to participants to encourage participation. No fidelity measures for the intervention were used, and limit an understanding of how well the student facilitators adhered to the intervention curriculum. The measures used in the pre and post surveys on perceived conversational easiness had limited reliability and validity information. The assessment of conversational skills often requires observations by raters. In this study conversational skills were not observed or assessed in an objective manner. This study only assessed perceived easiness with conversing with others. The self-report data used for this study would not be capable of measuring actual conversational skill development. Additionally, the study did not utilize a randomized controlled design. The study design did not include a control group. Findings could also be influenced by confounding factors such as history, maturation, selection, attrition, repeated testing, regression, and not as a result of the training (Harris et al., 2006; Shadish et al., 2002; Skelly et al., 2012). Variations in quasi-experimental designs allow for stronger causal interpretations (Harris et al., 2006). Future studies should choose the best fit design that is feasible given the circumstances by including

a control group. There was no long term follow along performed to understand participant retention of skills, and/or employment outcomes. Despite the identified limitations, this study supports the feasibility of the group *Conversing with Others* as delivered by entry level rehabilitation counselors to assist individuals with ASD who are seeking employment. Despite these limitations, the feasibility and usefulness of the group intervention was supported. Group intervention helps persons with ASD make conversations.

4.2. Directions for future research

The top areas of improvement for future studies include the following:

- 1) The open-ended questionnaires evaluating the groups may need to be modified using visual aids and multiple-choice questions. Approximately 5–10% of the participants reported “I don’t know” to open-ended questions such as “what did you like about this group” and “what would you change about this group” and “what other information would be helpful to include in the group,” suggesting that multiple choice questions, rather than open-ended questions, would be elicit more valid responses. Reviewing previous methods used to evaluate youth with ASD (McVey et al., 2016; Payakachat et al., 2012) suggests that, due to the cognitive deficits in persons with ASD, adjusting the questionnaire to a more direct and didactic self-report may better evaluate the participants’ gained knowledge after DST groups. The questionnaires may have yielded more significance results if framed in a qualitative questionnaire format. The Likert scale encompassing the scale ranging from “strongly disagree” to “strongly agree” may be complicated for the participants with ASD. Available instruments that use visual ratings in assessing skills of individuals with ASD were found to be useful for this population. Therefore, utilizing visual ratings for pre/post questionnaires in future research may be more effective in assessing participant learning related to the skill.
- 2) Visual aids (i.e. emotional thermometer) should be provided in the questionnaires as well as in the intervention for future studies with people with ASD. When two researchers independently reviewed the open-ended questions, it became apparent that the questions were possibly misleading or confusing for the participants. Given that people with ASD experience social skills deficits (Sung et al., 2019; McVey et al., 2016), it would naturally follow that the wording of questions and clarification of the concepts would be necessary. At times, some participants appeared to misunderstand the intent of the questions and connected their responses to the group itself and not necessarily situations outside of the group.
- 3) Further developing the curriculum to become a brief, targeted intervention specifically for people with ASD would likely be useful. The curriculum and a DST training approach for work related soft skills has been effective with other populations (Oursler et al., 2019). Previous literature suggests that when working with persons with autism using cognitive behavior therapy approach, there are several ways to make CBT work for persons with autism. For example, modeling role plays and providing feedback are important for rehearsals of skills taught. When providing psychoeducation on affective education, using emotional thermometer and creating emotional scrapbook can be helpful to persons with autism. When teaching the skill of cognitive restructuring, persons with autism can benefit from being asked questions to clarify meaning and using comic strip conversations (Attwood, 2004). While this current intervention utilized role plays, modelling, feedback, worksheets, highly structured group sessions, elements found to be effective for working with individuals with autism, future modifications may wish to use visual aids for the intervention. Additionally, self-management using a checklist is a useful technique to assist persons with ASD to achieve greater independence in vocational activities (Hampshire & Allred, 2018). Future modifications to the intervention may include a self-monitoring form using checklists (i.e., Was I following the conversational rules? Yes/no) to monitor how well people are using conversational skills at work.
- 4) Facilitators noted several areas of consideration for future modifications of the intervention. These included greater emphasis on providing clear expectations of completing homework before group. In addition, since several facilitators needed to lengthen the duration and the

number of group sessions, that these adjustments be considered in future modifications of the group curriculum. Additionally, facilitators remarked that groups required a high degree of planning and organization. Therefore, verbiage about these logistical pre-group considerations should be expanded in the *Conversing with Others* manual.

- 5) In future studies, the evaluation of outcomes should include objective raters, to determine whether participant soft-skills actually improved post-intervention.

Our study provides an option to use a brief, structured group intervention designed to help people with ASD develop conversational skills with co-workers. Previously developed interventions for soft skills training for persons with ASD involved time-intensive interventions, requiring extensive staff training. For example, Sung et al. (2019) implemented ASSET, which consisted of an eight-week long group intervention consisting of 90-minute sessions followed by an optional social hour. Similar to the current intervention, the ASSET approach utilized a group approach and focused on work-related soft skills. However, ASSET involved two facilitators, a larger time commitment, and a wider focus of training topics, while the current intervention is brief, easy to implement, and adaptable to many different populations. Implementing this type of DST based curriculum allows for counselors with minimal training to be effective and also eliminates the need to hire outside of the agency or organization or provide extensive staff training within the agency.

5. Conclusion

This brief *Conversing with Others* intervention aimed to bolster conversation skills for people with ASD who are interested in gaining employment. Although our results suggest improvements can be made, they also suggest that this approach may be a useful intervention for developing social and communication-based interventions aimed to help people with ASD improve their employment outcomes.

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None to report.

Conflict of interest

None to report.

Ethical approval

This study received approval from the Rutgers University, Newark Health Sciences institutional review board (#Pro20140000332; Approval date: 9/10/2014).

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Informed consent

All participants provided informed consent prior to study participation.

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Appendix: Content Outline for *Conversing with Others* Intervention

Content Outline

Skill: Conversing with others

Definition: Conversing with others means engaging in a verbal, reciprocal exchange of thoughts and ideas with other individuals.

Benefit: Conversing with others helps you to socialize with peers.

Behaviors:

Session 1: Choosing topics for conversation

Session 2: Demonstrating interest in what others are saying

Session 3: Changing a topic

Session 4: Concluding a conversation

Performance Condition: When you are in a social situation with peers such as the cafeteria at work during lunchtime.
