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SINGLE SUBJECT DESIGN**

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USING VIDEO MODELING WITH FEEDBACK TO TEACH COURTSHIP
BEHAVIORS TO AN AUTISTIC YOUNG ADULT: A SINGLE SUBJECT DESIGN

A dissertation submitted in partial fulfillment
of the requirements for the degree of

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New York

by

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ABSTRACT

USING VIDEO MODELING WITH FEEDBACK TO TEACH COURTSHIP BEHAVIORS TO AN AUTISTIC YOUNG ADULT: A SINGLE SUBJECT DESIGN

Alyssa Paige Goodman

The purpose of this study was to assess the effectiveness of video-modeling with feedback on the development of courtship behaviors in an autistic individual. A concurrent multiple baseline across behaviors design was used to examine the impact of this intervention on three target behaviors: asking someone on a date, responding to acceptance, and handling rejection. The intervention consisted of showing the participant video models in which volunteers demonstrated the three target courtship behaviors. Following three, four, and five baseline observations for each target behavior, corresponding video models were introduced for each of the behaviors. Following the viewing of video models, the participant role-played the skill with a confederate while being video-recorded. The participant was shown this video-recording of herself and provided with feedback including praise and suggestions for improvement. The participant then completed another role-play for the behavior which was recorded and scored by research assistants. Outcome measures included percent of steps correctly performed on task analyses of the target behaviors as well as ratings of skill appropriateness. Two weeks following the discontinuation of the intervention phase, a generalization probe with a new confederate was conducted. Results demonstrated

substantial improvement in the percentage of steps completed on the task analyses and appropriateness ratings following the introduction of the intervention for all three target behaviors as well as during the generalization probe. Finally, the administration of a pre- and post-intervention Social Validity Questionnaire revealed that the participant gained confidence in her ability to use these targeted courtship behaviors in real life. Strengths, limitations, and suggestions for future research are discussed.

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When I first accepted my place as a doctoral student at St. John's University five years ago, I told myself not to get my expectations too high. In the back of my mind, I resigned to the fact that I would not be able to do it. I felt that I would succumb to pressure and self-doubt and that I did not have whatever it is that successful psychologists possess that allowed them to earn their degrees and practice with success. However, during these moments of self-derision I did not take into consideration an essential factor: my extensive support system, some of whom I did not even know yet. While I feel extremely proud of where I am and recognize the role I have played, I certainly would not have made it through my graduate journey without all those who have loved, supported, and guided me.

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and for that I am eternally grateful. Your accomplishments in the world of Special Education and steadfast dedication to helping children and families in need has been beyond inspiring to me and you are, and have always been, my hero. PopP, you are my fiercest advocate and my rock. You are available to me at any time for anything I need, and you push me to be a better version of myself. I love you both so much. To my sister, Emily, you are my best and truest friend, and you mean the world to me. Thank you for always being there to cheer me on and comfort me when I am down. I am so proud of the professional and overall human you have become. I love you. To my best friends, you have been by my side since middle school and have seen me at my weirdest. Thank you for sticking with me, supporting me, and loving me. I love you guys. To my incredible partner, Drew, when you entered my life you changed me forever. You instill me with confidence and pride every single day, and cannot thank you enough for your endless love, support, and sense of humor. I love coming home to you every day and I love you to pieces.

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dissertation to the autistic community. I have easily learned and grown the most from the autistic individuals I have worked with throughout the years and I hope my study provides something helpful to the community. Thank you for your advocacy and voices and I am proud to join the fight for accessible sex and relationship education for all.

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INTRODUCTION

In recent years, alongside the rise in rates of autism spectrum disorder (ASD) diagnoses, much research has focused on developing effective interventions for behavioral, social, and academic skills among the autistic population. However, one crucial aspect of life has been historically overlooked in both intervention research and practice for autistic individuals: sexuality and relationships (Solomon et al., 2019). Contrary to popular belief, which often permeates discussions of sex and dating among the ASD population, studies continue to indicate that autistic individuals desire sexual and/or romantic relationships at similar rates to their neurotypical peers (Hancock et al., 2017; Hannah & Stagg, 2016). However, due to significant social difficulties which partly characterize ASD, autistic individuals have lower levels of sexual or romantic knowledge as well as sexual and/or romantic experiences (Hancock et al., 2017; Hannah & Stagg, 2016; Panwell et al., 2015). While some interventions have been developed specifically for individuals with autism and/or Intellectual Disability (ID), evidence-based interventions for building sexual and romantic competency are still few and far between (Tullis & Zangrillo, 2013). Although there is growing research that has focused on teaching certain aspects of sex and sexuality such as privacy, masturbation, and the basic facts about sex, a glaring gap exists in the intervention research literature with regard to romantic relationships and courtship for those with autism both with and without an ID (Hancock et al., 2017). This study aimed to understand whether one particular intervention, video modeling with feedback, can be effective in teaching appropriate courtship skills to a young adult with autism.

Description of Autism Spectrum Disorder and Social Functioning

Autism spectrum disorder is a lifelong neurodevelopmental disorder which is characterized by deficits in social communication as well as restrictive, repetitive interests and behaviors (American Psychological Association, 2013). ASD is a largely heterogeneous condition comprised of different individuals with different experiences, interests, and desires. A great many of these individuals express explicit and implicit interest in friendships and socialization (Cook et al., 2017; Deckers et al., 2017; Fletcher-Watson et al., 2013). Sexual and romantic relationships are among the important types of social interactions and relationships that make up social and personal lives. Accordingly, accumulating evidence indicates that many, if not most, autistic individuals do express desire for sexual and/or romantic relationships in their lives at similar levels to neurotypical peers, yet they engage in such relationships at vastly lower rates (Hancock et al., 2017; Penwell Barnett & Maticka Tyndale, 2015; Sala et al., 2020). Due to social and communication difficulties inherent in ASD, individuals on the autism spectrum generally have a much more difficult time socializing and forming relationships with others relative to neurotypical (NT) individuals (Hodges et al., 2020; Scott et al., 2018). Deficits in social cognition, theory of mind, and communication can impair the ability of those with autism to make and maintain meaningful social relationships (Pagni et al., 2020; Sasson et al., 2012). Indeed, Stokes et al (2007) identified social functioning as the most significant predictor of romantic functioning in this population. As such, it is important to teach autistic individuals the requisite skills to develop and maintain social relationships, including romantic and sexual relationships. Existing sex education programs that some autistic individuals have access to in schools typically do not address

explicit dating behaviors, providing little to no opportunity for autistic adolescents to learn about appropriate courtship behaviors (Mintah & Parlow, 2018; Post et al., 2012).

Sexual/Romantic Functioning in Autism

In a systematic review, Hancock et al., (2017) found that, relative to neurotypical peers, autistic adults engaged in less social behavior, showed a lower understanding of privacy norms, engaged in more inappropriate sexual behaviors, and received less sexual education, both formally and informally. Further, studies have found that autistic individuals acquire information about sexual and romantic relationships at lower rates and from different and often less accurate sources than NT peers (Hancock et al., 2017; Solomon et al., 2019; Stokes & Kaur, 2007). This lack of information can be attributed to multiple possible explanations, including decreased opportunities for social interactions and friendships, which is one major source of sexual and romantic information, and an overall lack of official sex education in schools or lack of conversations about sex and relationships by caregivers and teachers (Pecora et al., 2015; Solomon et al., 2019). Stokes and Kaur (2007) describe a “vicious cycle” in which impairments in social skills lead to less social interactions, and less social interactions in turn lead to less opportunity to learn core components of social development including sexuality and romantic functioning, which then further isolates autistic individuals from their peers. Additionally, parents often express concern regarding the level of comprehension their children with autism may have when sexuality and romance are discussed and fear overgeneralization of the information provided to their children (Ballan, 2012).

While high levels of desire for romantic relationships are now increasingly documented in the literature, the romantic experiences of autistic individuals are only

beginning to be understood. Sala et al (2020) found that autistic adults identified uncertainty and inadequate knowledge about relationship and communication expectations as well as difficulties with courtship behaviors as significant barriers to romantic functioning, while clear and direct communication was identified as a core enabler of successful romance and intimacy. Across studies, a lack of explicit sex and relationship education (SRE) designed for autistic individuals was identified as a substantial barrier to positive sexual and romantic functioning (Byers et al., 2013; Hancock et al., 2017; Hartmann et al., 2019; Sala et al., 2020; Stokes et al., 2007).

Courtship Behaviors

Courtship is a particularly nuanced and subtle form of socialization that involves many nonverbal and subtly understood social cues and rules which are not as easily understood by those with the social deficits central to autism (Mogavero & Hsu, 2020). Appropriate courtship behaviors are defined as expected and/or typical behaviors one engages in when trying to initiate a romantic relationship, such as asking someone out on a date and calling a potential love interest on the phone (Stokes et al., 2007). However, the majority of the limited intervention literature targeting courtship in autistic individuals focuses on reducing *inappropriate* courtship behaviors, which include behaviors such as persistently pursuing someone after rejection, making threats, or other behaviors deemed generally inappropriate by societal standards (Mintah & Parlow, 2018), rather than teaching *appropriate* courtship behaviors. Impairments in social interactions and interpretation of both verbal and nonverbal communication are sometimes associated with an increased likelihood for engaging in socially inappropriate courtship behaviors, such as harassment and stalking (Mogavero & Hsu, 2020). Autistic

individuals have reported that a lack of understanding the mechanisms of relationships makes it more difficult to recognize inappropriateness or unhealthy behavior (Mogavero & Hsu, 2020). Multiple specific theories have been posed by researchers as explanations for increased rates of inappropriate courtship behaviors in the autistic population, including deficits in theory of mind, poor impulse control, and a lack of social support (Mintah & Parlow, 2018; Sevelever et al., 2013).

Stokes et al., (2007) found that, whereas NT individuals generally engaged in appropriate courtship behaviors toward specific, known people for whom they had a romantic interest, autistic adolescents and adults engaged in appropriate behaviors less frequently and were more likely to engage in a variety of socially inappropriate behaviors including inappropriate touching, believing that the object of their affection must reciprocate feelings, showing obsessional interest, making inappropriate or threatening comments, monitoring a person's activities, or threatening self-harm. Many of these behaviors begin to cross the line into stalking, which is illegal in all 50 states (Post et al., 2012).

Sex and Relationship Education for Autism and Developmental Disabilities

A review of the literature regarding the experiences of autistic individuals with sexual and romantic functioning forms an overarching consensus regarding the essential need for explicit sex and relationship education (SRE) for the autistic population. In all studies reviewed which addressed sexual or romantic functioning among adolescent individuals, more extensive and more available SRE curriculums and interventions were the primary recommendations for future study and practice (e.g., Mintah & Parlow, 2018; Sala et al., 2020). While the need for evidence-based SRE for autistic people is becoming

well understood, research is still lagging behind in the development of such programs. Accumulating evidence suggests that SRE which is provided to NT students is not sufficient for providing much needed education regarding sexuality and relationships to autistic people (Hannah & Stagg, 2016). While most NT students are able to supplement the formal sex education they are provided with in school with information garnered through peer interaction, the same generally cannot be said of those with autism, who struggle with developing and maintaining consistent peer friendships in which such information is discussed (Hannah & Stagg, 2016; Stokes & Kaur, 2007). While some interventions designed to address this issue have been created, many are not rooted in evidence or have not undergone rigorous scientific inquiry (Sala et al., 2019).

Additionally, there is a dearth of literature regarding focused intervention practices (FIPs) which can be used to teach appropriate courtship and romantic behaviors.

Overall, the majority of the scant research on teaching courtship and relationship skills is either lamenting the lack of interventions to teach such skills or providing recommendations for comprehensive SRE interventions for autistic individuals (Hannah & Stagg, 2019; Stokes et al., 2007). While such comprehensive SRE intervention programs may ultimately prove to be helpful, like other comprehensive treatment models, they require substantial time, resources, and training to implement (Odom et al., 2010), which many school and community professionals may not have access to.

Comprehensive treatment models (CTMs) are a set or package of practices designed to address a broad range of skills (Odom et al., 2010), whereas Focused Intervention Practices (FIP's) are goal-oriented interventions which are designed to address specific learner outcomes. Whereas CTMs occur over an extended period of time, are intense in

their implementation, usually have multiple components, and are designed to achieve a broad learning or developmental impact on the “core deficits” of ASD, FIPs generally occur over a shorter period of time than CTMs (i.e., until the goal is met) and are designed address a single skill or goal for individuals with autism, such as a prompting practice to teach a peer social communication goal (Odom et al., 2010; Odom et al., 2022; Wong et al., 2015). FIPs have greater accessibility, feasibility, and acceptability for professionals responsible for intervention implementation in comparison to CTMs (Wong et al., 2015). Examples of FIPs include prompting, reinforcement, discrete trial teaching, social stories, and video modeling (Odom et al., 2010; Wong et al., 2015), the latter of which is the focus of the present study.

Video Modeling for Complex Social Skills

Video modeling has been classified as an evidence-based practice for teaching a variety of functional, vocational, and social skills to individuals with autism (Hume et al., 2021). It has been suggested that strong visual perception skills, the intrigue of technology, and the ability to focus on salient features of certain skills being taught make video modeling particularly useful as a teaching tool for autistic individuals (Ayres & Langone, 2008; Qu et al., 2018). Further, the overall concept of learning by watching others derives from social learning theory, piloted in seminal studies by Bandura (1969; 1976). Video modeling has been found to be an effective intervention both on its own as well as combined with prompting and feedback (Acar & Diken, 2012; Aryes & Langone, 2008; Qi et al., 2018). Video modeling typically involves the participant viewing a video recording of one or more individuals (models) engaging in specific, scripted actions or verbalizations before the participant is then asked to perform the action or skills that they

have been shown (Allen et al., 2010). Video modeling has been found to be effective in teaching complex social and communication skills to individuals with autism (Cardon et al., 2019; Charlop et al., 2010; Duenas et al., 2019; Nikopoulos & Keenan, 2007; Shukla-Mehta et al., 2009) such as conversational turn-taking and facial expressions (Mason et al., 2012). No study to date, however, has examined the use of video modeling in teaching dating skills or courtship communication to autistic individuals.

Present Study

Although autistic individuals in general express a desire for romantic and/or sexual relationships, successful romantic functioning is reported at much lower rates (Hancock et al., 2017; Hartmann et al., 2019; Laugeson et al., 2015). Appropriate courtship behaviors have been identified as a significant barrier to dating and relationships among autistic individuals (Stokes et al., 2007). While sexuality and relationship education curricula for individuals on the spectrum have been developed, evidence regarding their efficacy is scant (Pugliese et al., 2019; Visser et al., 2015). Additionally, while courtship behaviors are incorporated into comprehensive social skills curricula such as the Program for the Education and Enrichment of Relational Skills (PEERS®) for Young Adults (Gantman et al., 2012; Laugeson et al., 2015), which includes a lesson on dating etiquette, specific FIPs such as video modeling have not been assessed on their own to target courtship or dating behaviors. In contrast to FIPs, comprehensive SRE curricula such as the Tackling Teenage Training program, a manualized individual intervention program designed to teach psychosexual knowledge with an emerging evidence-base (Dekker et al., 2015; Visser et al., 2015), or manualized social skills programs such as PEERS® are resource-intensive (cost-intensive and time-

intensive) to implement and disseminate and typically require extensive training and experience that is not available or accessible to most practitioners (Tullis & Zangrillo, 2013). Thus, an FIP such as video modeling might be more feasible and accessible for practitioners to use to teach courtship skills to young adults with autism and may therefore increase access for individuals on the spectrum.

Video modeling is an evidence-based intervention for teaching a variety of skills to autistic individuals, including complex social skills (Cardon et al., 2019; Duenas et al., 2019), yet video modeling has not been evaluated as a potential stand-alone intervention method to teach dating or courtship behaviors. This study aimed to examine whether video modeling with feedback is an effective intervention for teaching appropriate courtship behaviors to an autistic young adult.

RESEARCH QUESTIONS & HYPOTHESES

The present study aimed to address three research questions: (1) Will an autistic young adult show improvement in three courtship skills – specifically, asking someone out on a date, responding to acceptance, and handling rejection appropriately – after viewing video models of these appropriate courtship behaviors with corrective feedback, prompting, and praise, (2) If video modeling results in improved courtship skills, will these effects *maintain* once the intervention phase is completed, and (3) Will the participant rank their *self-confidence* with these three skills and related courtship skills higher after the completion of this intervention?

It was hypothesized that, after the implementation of the intervention (video modeling with corrective feedback, prompting, and praise), the participant would (a) be rated higher on their ability to appropriately ask someone out on a date, (b) be rated higher on their ability to appropriately respond to acceptance, (c) be rated higher on their ability to appropriately handle rejection, d) maintain these skills two weeks later (i.e., continue to perform these skills once the intervention is removed), and e) rate their self-confidence with the skills taught to them as higher than they did at baseline.

METHOD

Participant

Following approval from the Institutional Review Board (IRB) at St. John's University, informational flyers (Appendix A) were distributed digitally through social media and emails to universities and extracurricular activities which serve students with autism. Potential participants who contacted the author either through email or telephone were screened through a telephone call with or without their parent during which the author completed the participant screening packet based on participant and parent responses (Appendix B). If participants appeared to meet criteria based on screening, the author arranged to meet with them in person. Participants were considered for inclusion if they were: a) diagnosed with autism spectrum disorder (as documented in a written diagnostic evaluation from a licensed psychologist or developmental pediatrician), b) 18 – 22 years of age, c) verbally fluent (using complex sentences to carry on back-and-forth conversations), and d) expressed interest in dating. Three potential participants expressed interest in participating in the study and were preliminarily determined to meet the four aforementioned inclusion criteria based on the screening packet. One of these potential participants did *not* meet inclusion criteria upon in-person meeting due to a lack of interest in dating. Another one of these potential participants dropped out before baseline observations due to scheduling conflicts. The third potential participant, "Taylor Swift" (pseudonym, based on her intense interest in Taylor Swift), was found to meet inclusion criteria and signed the consent form (Appendix C) to participate in the present study. Taylor received gift cards totaling \$200 upon completion of this study.

Taylor is a 21-year-old high school student with a prior DSM-IV diagnosis of Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS), which is now classified as Autism Spectrum Disorder according to the DSM-5 (American Psychiatric Association, 2013). Taylor is conversationally fluent and has expressed and continues to express interest in dating. She and her mother directly reported a history of crushes on peers and difficulty figuring out how to approach romantic situations. Per her most recent psychoeducational testing in 2020, she has a Full-Scale IQ of 58 on the Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV) and a Core Language score at the <1st percentile on the Clinical Evaluation of Language Fundamentals, Fifth Edition (CELF-5). Her Speech/Language Pathologist noted that Taylor's receptive language skills reveal adequate language comprehension for social communication and her responses to social questions are appropriate and on-topic. Taylor attends a 15:1:2 classroom at a general education public school and receives Speech/Language Therapy and Occupational Therapy as related services.

Setting and Materials

All sessions were conducted in the participant's home in the living room. Family was sometimes present in an adjacent room and did not participate in sessions. The video modeling intervention was delivered using the investigator's iPad. Video models were created by filming volunteers engaging in the specified target behaviors, Role-plays were also recorded via iPad and uploaded to the investigator's St. John's University OneDrive account and shared with research assistants..

Experimental Design

A concurrent multiple-baseline across behaviors design (Hersen & Barlow, 1976; Kazdin, 2011) was used in this study to evaluate the effects of the video modeling intervention on the three courtship behaviors, providing three demonstrations of experimental control. A multiple baseline across behaviors design is a way to assess interventions that target multiple behaviors that cannot be reversed after being learned (Gast et al., 2018). In multiple baseline designs, the intervention is implemented sequentially (i.e., in an AB fashion) across different individuals, behaviors, or settings (Rizvi & Nock, 2008); in this case, the intervention was applied across three different behaviors. A multiple baseline design across behaviors involves the repeated collection of dependent variable measures for different lengths of time or number of sessions per behavior before the introduction of an intervention (i.e., baseline phase), after which measures of the dependent variable across behaviors are continually collected (i.e., intervention phase). The purpose of this design is to ensure that the intervention is the source of change for the dependent variables by demonstrating that such changes result from the intervention itself rather than from extraneous factors which could account for behavioral changes, thus controlling for threats to internal validity (Kazdin, 2011). Approximately two weeks after the intervention phase was completed, a generalization probe was conducted in order to assess whether Taylor maintained the gains she made during intervention (without continued intervention) and whether she generalized those skills to a new role-play partner.

At the onset of this study, Taylor began the baseline phase (A) for each of the target behaviors. After three baseline observations of the first target behavior (asking on a

date), intervention was introduced for that first target behavior, while the baseline phase (A) continued for the remaining two target behaviors. Taylor then began the intervention phase (B) for the second target behavior (responding to acceptance) following the fourth baseline observation for that second behavior, while the baseline condition continued for the third behavior. Taylor finally began the intervention phase for the third target behavior (handling rejection) following the fifth baseline observation for that third behavior. The intervention phase then continued for eight, seven, and six sessions for target behaviors one, two, and three respectively. Two weeks after intervention, a generalization probe was conducted with identical conditions to baseline.

Measures

Direct Behavioral Observation: Percent of Steps Completed on Task

Analysis

The participant was video-recorded engaging in the role-plays for each target behavior. The investigator created a task analysis (Appendices F-H) for each target behavior with percent of steps correctly completed recorded and graphed for each role-play. This task analysis was adapted from dating role-plays outlined in the PEERS® for Young Adults manual (Laugeson et al., 2015). “Correct” responses were defined as targeted components outlined in the task analysis completed according to the task analysis description and within the correct order (without prompting or direct instruction). These percent of steps completed on the Task Analyses were scored by one graduate student (primary rater) and one undergraduate student (secondary rater) for Interobserver Agreement (IOA, which will be described later).

Direct Behavioral Observation: Subjective Ratings of Appropriateness

Appropriateness of each target behavior was coded as a second dependent variable. Appropriateness was assessed using an “Appropriateness Rating Scale” created by the investigator (A.G.) to rate the participant’s proficiency with each target behavior on a Likert-type scale of 1-4, with 1 = a complete lack of the skill and 4 = total appropriateness (see Appendix K). This scale was created based on descriptions of skills that were provided for each target behavior (Appendix J). The Appropriateness Rating Scale was completed for each target behavior by two graduate students who were masked/blind as to whether videos were recorded during baseline or intervention trials. One graduate student was the primary rater while the second graduate student provided ratings for IOA.

Social Validity Questionnaire

The participant completed a questionnaire in which she was asked to rate her confidence with engaging in dating overall as well as her confidence performing the three target courtship behaviors on a Likert-type scale of 1 to 5 (where 1 = strongly disagree and 5 = strongly agree). Two versions of this questionnaire were administered to the participant, including a Pre-Intervention questionnaire (administered prior to baseline) and a Post-Intervention questionnaire (administered following completion of the intervention). The Post-Intervention questionnaire included the same questions presented to the participant in the Pre-Intervention questionnaire as well as additional Likert-style and open-ended questions regarding Taylor’s perceptions of and reflection on the intervention. See Appendices D and E for both of Taylor’s completed questionnaires.

Procedure

Three, four, and five baseline observations were conducted for each of the three target courtship behaviors, respectively. Baseline data was collected for each target behavior once per session. Before baseline observations began, the participant completed her pre-intervention Social Validity Questionnaire. During baseline observations, Taylor was asked to engage in a role-play with one confederate, a 24-year-old neurotypical male. Prior to the onset of the baseline observations, it was explained to Taylor that the role-plays were only for practice and that she was not actually asking the confederate out on dates. Taylor expressed understanding of this and did not report concerns when asked. The participant was instructed to ask the confederate on a date when the investigator (A.G.) presented the discriminative stimulus “Ask him on a date.” After Taylor asked him on a date, the confederate would respond “yes” to going out on a date in one role-play and “no” in another role-play (in a randomized order). Taylor did not know what the confederate’s answer would be (yes or no) prior to the role-play. These role-plays were video-recorded and then shown to the research assistants (graduate and undergraduate students who were different from the confederates). Four research assistants (RA’s) coded these videos using the task analyses (Appendices F-H) and Appropriateness Rating Scale (Appendix K), including one primary RA coding the task analysis, one primary RA coding the rating scale, and two secondary RAs who coded each for IOA (one for each measure). For the task analyses, the RAs rated “yes” or “no” as to whether or not each step in the task analyses were completed. RAs completed the Appropriateness Rating Scale based on written skill descriptions provided in Appendix J.

After baseline observations were completed, the video modeling intervention was introduced and the role-plays between the participant and confederate were recorded. During each session of the intervention, the participant viewed two full video-models of young adult volunteers engaging in the target behaviors (each video lasting approximately 30 seconds long) that were shown by the investigator on an iPad. Volunteers for the video models were neurotypical. Although there are three target behaviors, only two video models were introduced and subsequently two types of role-plays were conducted. In the first video, a female volunteer asked a male volunteer out on a date while following the steps laid out in the first task analysis (Appendix F) and skills description (Appendix J). He then accepted her invitation and she responded appropriately by following the second task analysis (Appendix G) and skills descriptions (Appendix J). In the second video, the female volunteer asked the male volunteer on a date following the same steps laid out in the first task analysis and the male volunteer said no. Taylor subsequently handled this rejection following the third task analysis (Appendix H) and skills description (Appendix J). These video models were developed based on the stated gender and romantic orientation of the participant.

Video models were presented one at a time and, following each video, Taylor was then asked to engage in the corresponding role-play of the target behavior(s) with the confederate. The investigator recorded these role-plays on the iPad. This initial role-play was then shown to Taylor paired with corrective feedback for incorrect responses (e.g., reminders to remain oriented to the partner, reminders to say goodbye) and social reinforcement in the form of specific praise for correct/appropriate responses. During performance feedback, Taylor was shown a simplified checklist of steps laid out in the

video model (Appendix I) to help guide the feedback. Taylor was then asked to engage in the role-play again. The video of the second role-play was not shown to Taylor and was sent to the RAs to rate; the RAs only coded the second role-play from each trial, as it occurred after Taylor had received the feedback. This full process (in which all target behaviors entered the intervention phase) occurred over 6 trials for each video-model. Specifically, the first video and role-play included two target behaviors (asking on a date and responding to acceptance). The intervention phase was completed once Taylor performed at least 80% of task analysis steps across three consecutive trials of one target behavior. The participant received feedback for the first target behavior (asking on a date) following the first role play in which the confederate accepted the invitation. Subsequently, the RAs only rated this target behavior from the “acceptance” role-plays. The second video model and role-play also included two target behaviors (asking on a date and handling rejection) with the third target behavior, handling rejection, coded by RA’s. Two weeks following the completion of the intervention, Taylor engaged in generalization role-plays in an identical format to baseline, except with a new confederate. This confederate was Taylor’s friend who is also diagnosed with ASD. Research assistants coded these two role-plays as they did during baseline and intervention. The participant also completed the Post-Intervention Social Validity Questionnaire (Appendix E) at this time.

Interobserver Agreement (IOA)

In order to ensure that data was analyzed with sufficient interrater reliability, one-third of the recorded role-plays were double-coded for IOA for both the task analyses and appropriateness rating scales. The author (A.G.) trained two research assistants (R.A.’s)

to code the task analyses for all three target behaviors and trained two other R.A.'s to code the rating scales by watching sample videos of volunteers engaging in the target behaviors with varying degrees of appropriateness. Once an 80% rate of agreement was achieved between the two R.A.'s across three consecutive practice role-play videos for the task-analyses and for Likert appropriateness ratings for the second behavior, training was considered complete. The steps completed on the task analysis were compared (between the two R.A.'s) on an item-by-item basis. IOA was calculated for the task analysis by the number of steps that were agreed upon for completion (i.e., "yes" versus "no") divided by the total number of agreements plus disagreements multiplied by 100. For the Appropriateness Rating Scale, agreement was defined as two raters coding an item the same rating (1, 2, 3, or 4) or within one point of each other (as was done in Lansey et al., 2021 and Van Noorden et al., 2022, for example).

Intervention Integrity

The accuracy of intervention implementation, known as "Intervention Fidelity" or "Treatment Fidelity" or "Intervention Integrity," measures the accurate implementation of each element of a treatment or intervention, assessing whether an intervention is delivered as it was intended to be delivered (Sanetti et al., 2021). Three procedural intervention integrity checklists were generated (see Appendices L-N) and included a list of each component of intervention across each intervention stage. One checklist was used when only the first target behavior was introduced (Appendix L), one checklist was used when the first two target behaviors were introduced (Appendices L and M), and the final checklist was used when the third target behavior was introduced (Appendix N). During intervention, the investigator completed the appropriate checklists alongside the

confederate. The investigator and confederate did not discuss their responses with each other. Intervention integrity was calculated using the confederate's responses by dividing the number of steps completed by the investigator (A.G.) in the session by the total number of steps that could be completed on the checklist. Guidelines suggest that 80-100% adherence is "high" treatment fidelity, 50-79% is considered moderate, and 0-49% is considered low treatment fidelity (Sanetti et al., 2021). IOA was calculated for treatment fidelity by comparing the confederate's responses with the investigator's responses for 100% of the sessions. Scores were compared on an item-to-item basis and calculated by dividing the number of agreements by the total number of agreements plus disagreements and multiplying that number by 100.

Data Analysis

Once IOA was obtained, skill appropriateness scores as well as percentage of correct steps independently completed for the task analyses were plotted on separate graphs for each behavior. Visual analysis was used to assess the effectiveness of the intervention. Specifically, trend, level, and stability of behavior ratings were analyzed to determine whether or not the intervention yielded substantial change (Byiers et., al, 2012). Additionally, non-regression effect size was measured through the use of Percentage of Non-Overlapping Data (PND) as well as Mean Baseline Difference (MBD). PND has been found to hold the highest rate of agreement with visual analyses compared to other commonly used forms of non-overlap regression effect sizes (Yucesoy-Ozkan, 2019). PND was calculated by dividing the number of intervention data points which are higher than the highest baseline data point by the total number of data points in the intervention phase. This number is then multiplied by 100 (Scruggs et al.

1987). Per guidelines laid out by Scruggs et al., (1987), a PND between 90-100% indicates highly effective treatment. Due to the potential for outlier impact on PND effect sizes (Busse et al., 2015), MBD was also calculated by subtracting the mean of data point values collected during baseline from the mean of data points during and following intervention, dividing that difference by the mean of baseline data points, and multiplying that value by 100 (Campbell et al., 2003).

RESULTS

Target Behavior 1: Asking on a Date

Graphs for percent of steps completed on the T.A. and appropriateness ratings are presented in Figures A and B, respectively, for all target behaviors. During baseline, Taylor performed on average 16.3% of steps correctly ($SD = 4.04$; range 14-21%) on the task analysis for asking on a date. Taylor on average received a rating of 1 out of 4 ($SD = 0$; range 1-1) on the appropriateness rating scale. During intervention, Taylor performed on average 84% of task analysis steps correctly ($SD = 12.64$; range 64-100%) and was rated on average 3.63 out of 4 ($SD = 0.52$; range 3-4) on the appropriateness rating scale for asking on a date. On the generalization probe, Taylor completed 86% of steps and was given an appropriateness rating of 4.

In terms of Visual Analysis, both appropriateness ratings and percentage of task analysis steps completed trended upwards during intervention. Data was generally stable during baseline and was additionally relatively stable following the second intervention observation. Immediacy of intervention effects was also evident for both measures, as Taylor completed more steps correctly and was given a higher appropriateness rating than baseline for asking on a date upon the introduction of the intervention. Her level of performance additionally increased notably as she earned low scores during baseline and then moderate-high and high scores during and following intervention for both measures. PND for both steps completed and appropriateness ratings were 100%, meaning 100% of intervention data exceeded those at baseline (indicating that intervention was highly effective). MBD for steps completed was 414% and MBD for appropriateness ratings was 262.5%, indicating very high levels of behavioral improvement from baseline.

Target Behavior 2: Responding to Acceptance

During baseline, Taylor performed an average of 2.75% of steps correctly ($SD = 5.5$, range 0-11%) on the task analysis for responding to acceptance and she received an average appropriateness rating of 1 ($SD = 0$, range 1-1). During intervention, Taylor performed an average of 65.29% of steps correctly ($SD = 16.44$, range 33-78%) for responding to acceptance and received an average appropriateness rating of 3.43 ($SD = 0.53$, range 3-4, SD). On the generalization probe, Taylor performed 78% of steps correctly and earned an appropriateness rating of 4.

Visual analysis for responding to acceptance was similar to Target Behavior #1 (asking on a date), with appropriateness ratings and steps completed trending upward upon intervention with relative stability during baseline and data stably increasing following the implementation of the intervention for both measures. Her “responding to acceptance” skills for steps completed on the task analysis and appropriateness ratings were low during baseline and entered the moderate and moderately high range during and after intervention. PND for appropriateness and steps completed was 100%. MBD for steps completed on the task analysis is 2274% and MBD for appropriateness ratings is 243%.

Target Behavior 3: Handling Rejection

During baseline, Taylor performed an average of 44% of steps correctly on the task analysis for handling rejection ($SD = 8.94$, range 40-60%) and received an average appropriateness rating of 1.4 ($SD = 0.55$, range 1-2). During intervention, Taylor performed an average of 83.33% of steps correctly for handling rejection ($SD = 15.06$, range 60-100%) and received an average appropriateness rating of 3.67 ($SD = 0.52$, range

3-4). On the generalization probe, Taylor performed 80% of steps correctly and received an appropriateness rating of 4.

Visual analysis of steps completed demonstrates a general trend upward upon the introduction of the intervention. For the appropriateness ratings, an upward trend is also apparent upon the introduction of intervention; however, data is additionally trending upward toward the end of the baseline phase. For the task analysis, data was generally stable during baseline. During intervention, Taylor's number of steps completed was stable in its increase with the exception of one dip in performance during session #8. Increase in performance was stable during intervention for the appropriateness rating scale. PND for steps completed on the task analysis for handling rejection was 83%, as one data point (60% at session #8) was equivalent to the highest data point during baseline (session #3). PND for appropriateness was 100%. MBD for steps completed was 89.3% and 162% for appropriateness.

Interobserver Agreement & Intervention Integrity

One third of the role-play videos (between Taylor and the confederate) were double coded for each of the three target behaviors for both steps completed on the task analyses and appropriateness ratings. For the appropriateness ratings, all double-coded scores fell within 1 point of one another, indicating an IOA of 100% for each target behavior. For percent of steps completed on the task analyses, a mean IOA of 92.85% ($SD = 8.25$, range 85.75-100%) was calculated for asking on a date, 86.11% ($SD = 17.67$, range = 66.67-100%) for handling acceptance, and 85% ($SD = 19.15$, range = 60-100%) for handling rejection. Completion of the Procedural Integrity Checklist yielded a score

of 98.21%, meaning that 98.21% of intervention steps were completed by the investigator (SD = 5.05, range 85.71-100,). IOA for Treatment Fidelity was 98.75%.

Social Validity

On the pre-intervention Social Validity Questionnaire (Appendix D), Taylor endorsed that she was “not sure” (rating of 3) whether she feels confident about her abilities asking someone on a date, responding to a “yes” appropriately, and responding to a “no” appropriately. She endorsed that she “strongly agrees” (rating of 5) that she feels nervous about asking someone on a date. She endorsed that she “slightly agrees” (rating of 4) that she feels confident in her dating skills and was “not sure” if she were likely to ask someone on a date. On the post-intervention Social Validity Questionnaire (Appendix E), Taylor endorsed improved confidence regarding each target behavior, indicating that she “strongly agrees” that she will be able to complete these skills. She provided the same response regarding feeling nervous to ask someone on a date as she did pre-intervention. Taylor reported that she “strongly agrees” that she feels confident in her dating skills, an improvement from pre-intervention. She provided the same response of “not sure” regarding her likelihood to ask someone on a date. She endorsed that she “strongly agrees” that she enjoyed the videos and role-plays, the videos and role-plays helped teach her dating skills, and that she would recommend the videos and role-plays to others who wanted to learn dating skills. When provided the space to comment about her experience, she wrote “I Love it”.

DISCUSSION

This study examined the effects of a video-modeling intervention with feedback to teach dating skills to an autistic young adult. Targeted behaviors included asking someone on a date, responding to acceptance, and handling rejection. As hypothesized by the author, the participant demonstrated substantial improvement on all target behaviors with regard to both the number of steps completed on a task analysis and overall appropriateness of the target behaviors during intervention. Taylor demonstrated the strongest level of improvement for the first two target behaviors, asking on a date and responding to acceptance. While improvement was still demonstrated on both measures for the third target behavior, handling rejection, Taylor's abilities at baseline were higher (on both the task analyses and appropriateness ratings) than her abilities with other target behaviors at baseline, possibly due to the fewer steps necessary for completion of that target behavior (only 5 steps for handling rejection, versus 14 steps for asking on a date and 9 steps for handling acceptance). Additionally, as hypothesized, Taylor demonstrated improvement on all three target behaviors during the generalization probe with a new role-play partner. Finally, as hypothesized, Taylor endorsed improved confidence regarding her ability to perform all three target behaviors after intervention was completed.

Overall, findings of the present study are consistent with previous literature that demonstrates the effectiveness of video-modeling interventions for teaching complex social skills (Cardon et al., 2019; Charlop et al., 2010; Duenas et al., 2019; Nikopoulos & Keenan, 2007; Shukla-Mehta et al., 2009). Accumulating evidence suggests a gap in the provision of sexual and romantic education for autistic individuals (Mogavero & Hsu,

2019) despite their continued expressed interest in romantic and sexual relationships. No known previous studies have assessed the effectiveness of video-modeling (or any other FIP) on dating or courtship behaviors. Therefore, this study offers preliminary evidence that video-modeling may be an effective, feasible, and enjoyable FIP to teach dating skills to autistic young adults, particularly those who do not have access to comprehensive intervention programs such as PEERS.

Strengths and Limitations

Strengths of this study include the short duration, cost effectiveness, and ease of implementation of the video modeling intervention. As previously discussed, whereas existing comprehensive intervention programs such as PEERS are time- and resource-intensive, this video modeling intervention was targeted, brief (i.e., eight intervention trials lasting approximately 10 minutes each), required only two individuals for intervention implementation, and required few materials/resources. Video models were created by providing individuals with a general behavioral outline and filming role-plays on an iPad, which was a simple and time-effective procedure. Additionally, the enjoyable and active nature of the video models and role-plays served as a strength of this intervention and study. Qualitatively, Taylor appeared to have fun and reported that she had fun during sessions and frequently smiled and laughed. She reported that she “loved” the intervention on her Social Validity Questionnaire and expressed that she felt strongly that she would recommend it to others. In fact, the inclusion of a measure of social validity is an additional strength of this study, given that single-case research frequently excludes such measures, reducing ecological validity (Snodgrass et., al, 2018). This intervention was also personalized for Taylor in multiple ways. Video models were

developed based on Taylor's gender and romantic orientation. Additionally, Taylor was consulted regarding whether she felt that looking at her role-play partner's face was an important skill for her to work on (whether she wanted to work on this skill) and inclusion of this skill was based solely on her response. In light of the neurodiversity paradigm, it is the expressed view of many autistic individuals that they should not have to engage in neuronormative social behaviors such as eye contact or requisite small talk just so they can appear like their non-autistic peers, thus masking or camouflaging their identity (DeThorne & Searsmith, 2021). Indeed, many autistic self-advocates believe that eye contact, or direct gaze, is an uncomfortable demand which serves only to force autistic people to align with neurotypical social expectations and "camouflage" their autistic traits and does not account for personal feelings and desires in relationships (Dufresne & Crehan, 2024; McGill & Robinson, 2020). In fact, Granieri et al (2020) found that reduced eye contact actually served as a predictor for positive peer relationships amongst autistic individuals. However, as the autistic community is comprised of many different individual viewpoints regarding matters of neurodiversity, Taylor's reported preference for *wanting* to learn to make and maintain direct gaze was honored in this intervention. Of note, the generalization probe was conducted with a friend of Taylor's who is also autistic, which provided an excellent opportunity for practicing this skill with greater ecological validity, as it is likely for individuals to ask out people they are acquainted with. Taylor's social circle is primarily comprised of individuals with developmental disabilities, meaning this generalization probe may have been more applicable or reflective of how she would behave if she were to ask someone on a date. In fact, evidence is emerging which indicates that many autistic people report

stronger relationships and emotional bonds with other autistic individuals due to shared communication expectations and decreased pressure for masking autistic traits while feeling othered in relationships with non-autistic individuals (Crompton et al., 2020). Additionally, the inclusion of feedback as a component of this intervention also allowed Taylor to reflect upon her skills and set goals for improvement, providing her with opportunities for self-efficacy and autonomy within the intervention. Indeed, Taylor was an active participant in her feedback following initial role-plays. She was able to engage in self-assessment as she looked over the steps for skill completion and expressed understanding when provided with additional guidance. Finally, this study was also developed based on feedback provided by an autistic consultant (Amy Gravino) who specializes in sex and dating in the autistic community, which boosts the content validity and social validity of this project and helped minimize a neurotypical bias in developing this intervention.

While the present study has many strengths, there are also several limitations of this study which must be taken into account when considering the results. First and foremost, only one participant was included in this study and, therefore, external validity is limited; results may not generalize to other autistic individuals with differing communication and cognitive abilities (among other individual variables). Second, appropriateness ratings for handling rejection were already showing an upward trend toward the end of baseline, meaning it is difficult to judge with certainty whether the intervention was responsible for improved ratings or if continued role-plays without video models may have yielded similar results. However, it should be noted that this finding is an outlier among the remaining results, meaning upward trends were not noted

during baselines for other behaviors or measures. Third, while Taylor did indicate increased confidence regarding her dating abilities, she did not report an improved willingness to ask someone on a date.

Fourth, it is important to note that the contrived nature of the role-plays and repetitiveness of confederate responses limits ecological validity. It is unclear to what extent Taylor would be able to ask another person out on a date or handle it appropriately if he said “no” if this was a *real* ask and rejection versus a *simulated* ask and rejection. It is reasonable to assume a rejection would be more distressing if she knew that it was a real rejection rather than a pretend/planned rejection. Fifth, while there are many benefits to high levels of consistency during intervention, it may be difficult to properly assess generalizability when the same confederate provided very similar responses during each role-play. Although a generalization probe was conducted two weeks after the intervention was discontinued, the only difference in the role-play for this probe was the identity of the confederate (i.e., a different confederate in the generalization probe than in the baseline and intervention phases). Sixth, due to time constraints, the follow-up probe for generalization occurred only two weeks after the intervention ended, meaning that the long-term impact of this intervention is unknown. Further, the measures used to assess the effectiveness of the intervention were created by the investigator and are therefore not reliable, valid, or standardized measures of courtship behavior. While the task analysis and skills descriptions were created based on content from the PEERS® manual (Laugeson, 2015), this manual is also not the definitive resource for “correct” or expected dating behaviors, as dating is a personal and variable process.

Related to this point, the notion of “appropriateness” of behaviors should be considered within the context of neurodiversity which, in juxtaposition to the medical model of disability, posits that diversity in brain functioning exists alongside other forms of diversity (i.e., biological, racial, etc..) and need not be changed due only to deviations from societal norms (Dwyer, 2022). Therefore, the steps and skills laid out as dependent variables may not be used or expected or desired by all neurodiverse people. As previously discussed, many autistic individuals prefer to date other autistic people, meaning that the following of NT social scripts may be less important during courtship and dating. It must be noted that, while numerous social skills interventions exist that aim to teach autistic individuals to socialize according to neurotypical standards, the reverse does not exist; there are no social skills interventions that aim to teach neurotypical people to interact in ways which are more acceptable to autistic individuals. While this is a glaring double standard, this study did inadvertently cater to neurotypical norms. While an autistic self-advocate and researcher was consulted once in the development of this study, an ongoing consultation model likely would have benefitted this study to ensure that the consideration of an autistic perspective was included as the project evolved. Finally, the present study only assessed three target behaviors regarding dating and did not offer any intervention regarding appropriate dating behaviors that occur thereafter.

Future Directions

Despite these limitations, the results of this study provide promising evidence regarding the effectiveness of video modeling with feedback on teaching basic dating skills to autistic individuals. As this study included only one participant, future research should assess the effects of a similar intervention with more individuals varying in age,

cognitive ability, and other demographic variables to ensure the generalizability of this intervention to other people (i.e., external validity). As various video-modeling studies have and have not included feedback as an intervention component, with a strong evidence-base for positive results for both methods (Acar & Diken, 2012; Aryes & Langone, 2008), it may be beneficial for future studies to assess video-modeling to teach dating skills without the inclusion of feedback to understand whether feedback serves as an important variable in the effectiveness of this intervention. Future studies may also graph ratings obtained from participant performance on the first role-plays (i.e., role-plays which occurred following viewing of the video models and before feedback) to analyze and directly compare results obtained with and without the inclusion of feedback. Future research should also target the generalization of skills not just to other people, but to other settings and situations (i.e., stimulus generalization) as well as to other types of courtship behaviors (i.e., response generalization). Moreover, ecological validity (i.e., whether the results can be generalized to naturalistic or “real-life” situations) is a crucial consideration when evaluating the feasibility and utility of an intervention in the real world (Carr et al., 1999). Future studies in this area of dating/courtship should aim to increase ecological validity; this may include using more naturalistic settings for intervention (e.g., a café or bar or book store versus the participant’s home), role-plays with many different confederates, including autistic confederates, that expose participants to many differing styles of confederate responses, the use of known confederates (e.g., acquaintances), or other variables which may better equip participants with the skills and confidence to ask others on dates outside of the study. Additionally, as the participant was aware that these role-plays were “pretend”, it is difficult to gauge how she would

have responded in real-life situations in which she has true romantic interest in an individual and will likely feel increased pressure and discomfort/anxiety when asking them out on a date as well as greater distress if she is rejected. Future studies may involve “real life” training as part of intervention in which participants truly ask individuals out on dates. Increased lengths of time between the end of intervention and follow-up probes for maintenance/generalization should be considered as well.

As previously discussed, Taylor was consulted regarding whether she wished to include direct gaze as a specific step in the task analyses due to concerns regarding neurodiversity. It may be beneficial for future studies to allow this step to be optional in order to reduce the risk of masking or camouflaging autistic behaviors in order to cater to neurotypical standards. Additionally, the fact that target courtship behaviors were limited only to the skill of asking on a date and responding appropriately indicates a gap in education and acquisition of skills which are important in dating. Future research should assess the effectiveness of video modeling or another FIP in teaching additional dating skills (such as what to actually do and/or talk about when going on the first date) and relationship skills. Future studies may also include different measures of courtship behavior. While it is difficult to conceptualize the development of objective measurements of dating skills, alternative measures should be considered. Therefore, the development of objective measures or psychometrically sound rating scales may better assess dependent variables related to courtship with increased reliability and validity. Consequentially, future research should focus on determining steps and skill descriptions for courtship behaviors with greater consensus from experts. Researchers should continuously seek the input of autistic individuals to better understand dating

expectations and patterns among the neurodiverse community. Such information will provide valuable insight into the struggles, successes, and needs of the community.

Implications for the Profession of School Psychology

The National Association of School Psychology (NASP) defines School Psychologists as qualified professionals "...who apply expertise in mental health, learning, and behavior, to help children and youth succeed academically, socially, behaviorally, and emotionally" (National Association of School Psychologists, 2021A). While not traditionally considered the role of a school psychologist, the promotion and development of inclusive interventions to teach students safe and appropriate sexual and romantic relationships is an important component of social, emotional, and behavioral success. In fact, NASP holds the position that all students, regardless of ability/disability, should have access to evidence-supported and developmentally appropriate sexuality education and that School Psychologists play a key role in the development and implementation of relevant interventions (National Association of School Psychologists, 2021B). While their position statement does not directly address romantic education, it is equally important that school psychologists provide direct and indirect consultation and support for students, teachers, or related staff in the implementation of interventions which address the development of safe and appropriate dating and relationship skills for all students. As previously discussed, autistic individuals are rarely provided with evidence-informed sexual/relationship education (Hannah & Stagg, 2016).

This study provides preliminary evidence supporting the use of video modeling with feedback as an FIP to teach basic courtship behaviors to autistic young adults (within the age range at which students with disabilities may continue to attend public school and receive related services). This brief, efficient, cost-effective intervention may

be used proactively to provide direct education and support to autistic students who seek to form romantic relationships with peers. This intervention may additionally be used reactively, or in response to reported unsafe or inappropriate courtship behaviors sometimes exhibited by autistic individuals (as well as NT individuals), such as harassment or stalking (Mogavero & Hsu, 2019; Post et al., 2012). Rehearsing target behaviors presented in this study may aid in the acquisition of appropriate alternative behaviors which serve the same or similar function as such inappropriate behaviors (Carr et al., 1993). School psychologists may work with special education teachers, behavior analysts, paraprofessionals, and other school providers to implement this intervention. They may provide training and instructional support and aid in data collection and analysis to determine the efficacy of the intervention and advise on possible modifications accordingly. School psychologists may aid in the individualization of the intervention by working with students to identify their romantic preferences as well as the targeted skills they would like to learn and practice. They should consider the desires and perspectives of their students to ensure that individual neurodiversity is valued. Additionally, school psychologists may help students receiving this intervention develop appropriate coping skills to deal with frustration and provide regular check-ins to ensure that the social-emotional wellbeing of these students is maintained. Finally, school psychologists should be active consumers of research regarding the provision of sexuality and relationship education and work to implement evidence-based inclusive curriculums and interventions to teach dating and courtship behaviors to autistic students.

Conclusion

In sum, there remains a significant gap in the literature addressing the provision of inclusive sex and relationship education for autistic individuals. While this study provides preliminary evidence suggesting the efficacy of one focused intervention practice (video modeling) to teach a limited set of courtship behaviors, it is the responsibility of researchers and clinicians alike to develop and implement interventions to address and improve quality of life for autistic individuals who desire romantic relationships.

Figure 1
Task Analysis Graphs

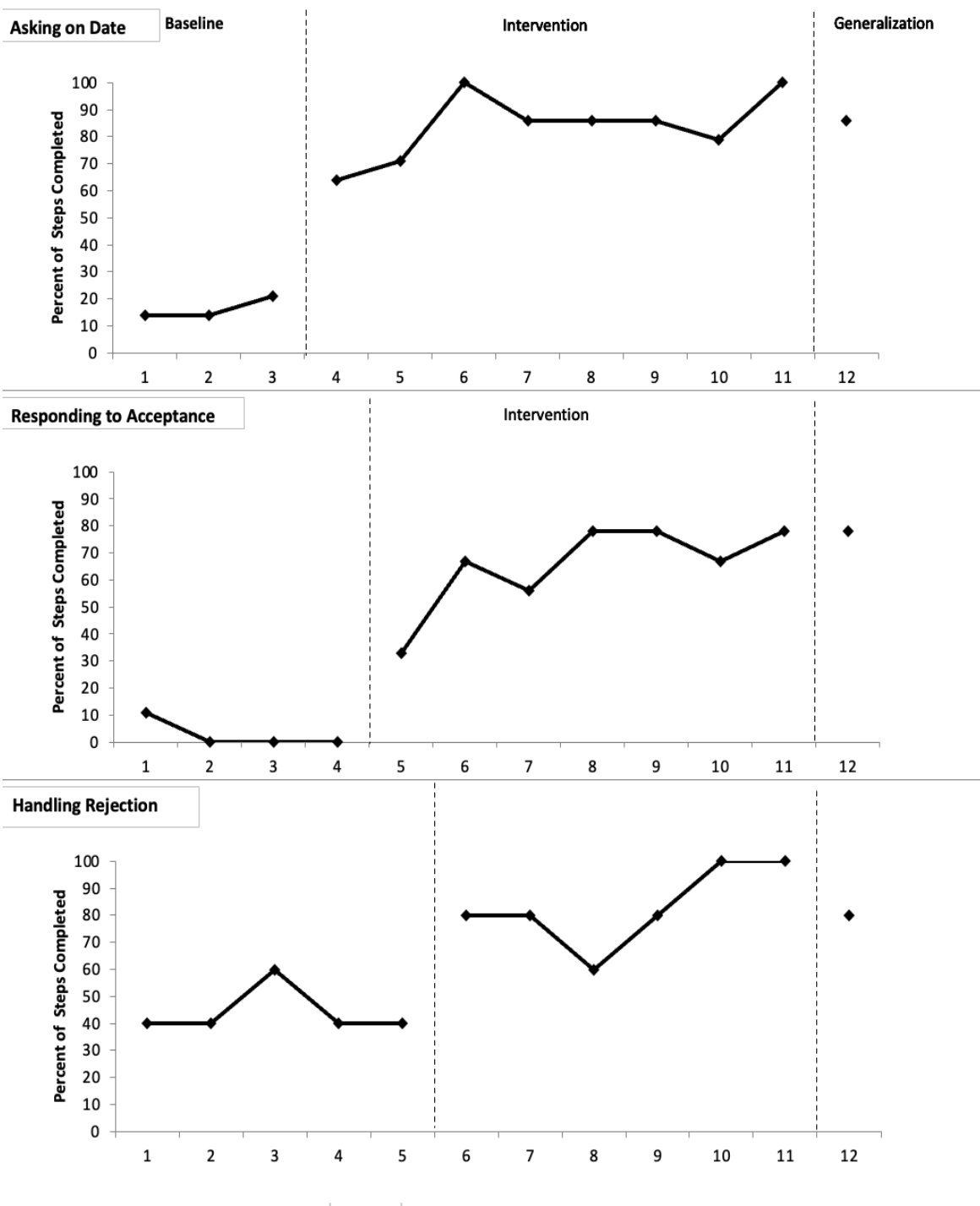
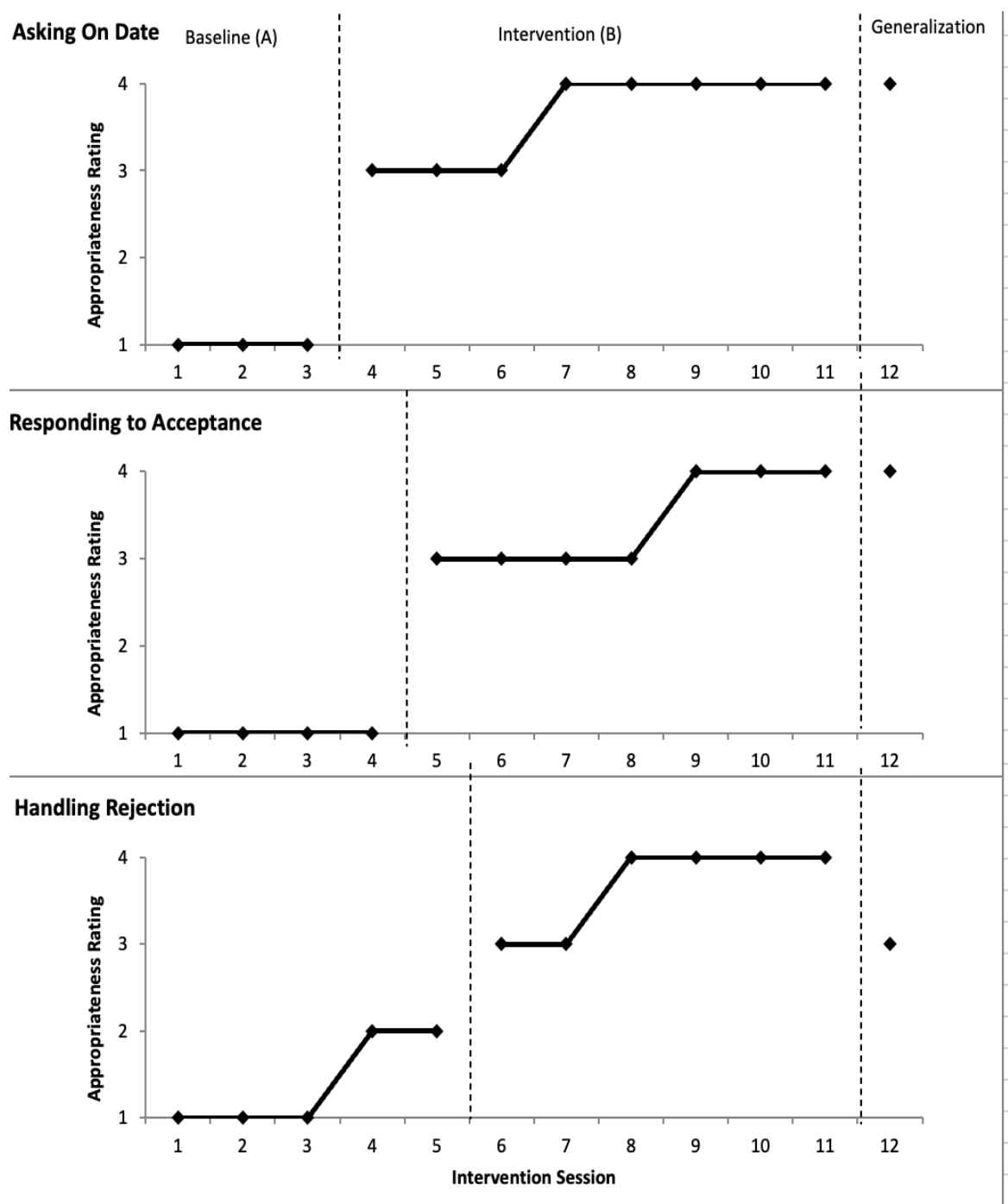


Figure 2

Appropriateness Ratings Graphs



APPENDIX A

Dissertation Flyer

FREE INTERVENTION STUDY: AUTISTIC TEENS/YOUNG ADULTS

Are you a teen/young adult with Autism who is interested in dating?

A study is being conducted through St. John's University to assess the effectiveness of a video modeling intervention for teaching basic dating skills to adolescents with a diagnosis of autism spectrum disorder. We are currently seeking participants. This intervention study may be appropriate if you:

- Are diagnosed with ASD
- Are interested in dating
- Can pay attention to brief videos
- Are 18-22 Years Old
- Have verbal abilities to participate in role-plays

Potential Benefits of This Study Include:

- Learning basic dating skills including asking someone on a date, planning a date, and handling rejection
- Gaining confidence in basic dating skills

For more information about this study and to request a screening for inclusion, please contact Alyssa Goodman, M.S., @ Alyssa.goodman19@stjohns.edu.



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APPENDIX B

Screening Questionnaire



Please take a few moments to complete the following questions. If at any point during completion of the questionnaires you decide that you no longer want to participate, you may stop answering questions. Completion of these forms does not guarantee enrollment in this study. After completing the following screening questionnaires, the principal investigator will contact you regarding your eligibility. Your decision to participate in research is completely voluntary and will not affect the services your child receives in any way. When you are finished, please attach the screening forms to an email and send them to Ms. Alyssa Goodman, M.S., via email at alyssa.goodman19@stjohns.edu

If there is anything about the study or your participation that is unclear or that you do not understand, if you have any questions or wish to report a research-related problem, you may contact Ms. Alyssa Goodman, M.S., via email or the faculty sponsor, Dr. Lauren Moskowitz, Ph.D., at (718) 990-6418 or via email at moskowil@stjohns.edu. Thank you.

Name (first & last):

Address:

Street:

City/Town: _____ Zip Code:

Daytime Phone Number: _____ Evening Phone Number:

Birthdate: _____ Age: ____

Grade:

Gender (circle one): Male Female Nonbinary

Pronouns (circle one): He/Him She/Her They/Them Other: _____

Where do you attend school or work?

If in school, what kinds of services do you receive? Circle all that apply:

Integrated Co-Teaching

Special Education Classroom with Ratio: _____

Speech/Language Therapy

Occupational Therapy

Physical Therapy

Counseling

Behavior Intervention Services

Parent Training

Other _____

Do you have an IEP? Yes No

Do you have any diagnoses? If so, please list them below.

Which of the following explains your attitude toward dating:

_____ Wants to date and does so successfully

_____ Wants to date and tries but is not successful

_____ Wants to date but has not tried

_____ Neutral about dating

_____ Is not interested in dating

Does you have any difficulties with expressive language? Yes No

If yes, please explain:

_____ -

Does you have any difficulties with receptive language? Yes No

If yes, please explain:

_____ -

Can you pay attention to a video for at least two minutes? Yes No

Can you imitate behaviors after a delay of a few minutes? Yes No

APPENDIX C

Consent Form



Consent Form for Adult Participants

Project Title: Using Video Modeling With Feedback To Teach Appropriate Courtship Behavior To Autistic Adolescents: A Single Subject Design

Principal Investigator: Alyssa Goodman, M.S., St. John's University

You have been invited to participate in a research study to learn about the effectiveness of a video modeling intervention for teaching appropriate dating skills to individuals on the Autism Spectrum. This study will be conducted by Ms. Alyssa Goodman, M.S., (Principal Investigator), a school psychologist and doctoral candidate in the Department of Psychology at St. John's University, for the fulfillment of her doctoral dissertation. Alyssa Goodman's faculty sponsor is Dr. Lauren Moskowitz, Ph.D., Department of Psychology, St. John's University.

Purpose: The purpose of this study is to examine whether the use of video modeling can help teens and young adults with ASD learn appropriate dating skills, specifically how to ask someone on a date, make plans for a date, and appropriately handle rejection.

Eligibility: You are eligible to participate in this study if you (a) have a diagnosis of ASD, (b) are between the ages of 18 and 22 years old, (c) have the language ability to understand video models and engage in role-plays, and (d) want to learn dating skills.

Procedure: If you give permission to participate in this study, you will be asked to complete a questionnaire to understand your confidence with dating skills. Participation in this portion of the can be conducted at the same time as the first session. You will be asked to complete role-plays with research assistants in which you will ask the assistants on dates. It will be explained that these role-plays are practice and that they do not reflect the assistants' true feelings or potential romantic opportunities.

Once you have completed a sufficient number of role-play sessions (e.g., approximately 3-7 sessions) so that enough data is obtained to establish a "baseline" (i.e., pre-intervention) level of your skills, you will begin the video modeling intervention. You will be shown brief video models of a young adult asking someone out on a date with the respondent saying yes as well as video models of the respondent saying no and the young

adult handling the rejection appropriately (calmly). Then you will be asked to engage in role-play in which you ask the research assistant out on a date. Your role-play will be recorded and shown to you with feedback. You will repeat this role-play which will also be recorded. The principal investigator (Ms. Goodman) will facilitate the role-plays and delivery of feedback.

Potential Benefits: By participating in the present research study, you may benefit by receiving a brief individually delivered video modeling and role-play intervention free-of-charge that can potentially help you learn essential dating skills and gain confidence in your ability to use these skills in real life.

Cost to You: You will not have to pay anything to participate in this study. In fact, once you child has completed the intervention, you will receive a \$50 Amazon gift card; if you withdraw before the end of the study, only partial payment of \$20 will be given.

Potential Risks/Discomforts: There are no known risks associated with participating in this study. You may feel some discomfort when participating in this intervention because you would only be asking someone on dates as part of a role-play. It is possible that you may become frustrated or upset with the “rejection” role-play (i.e., when the research assistant says no to the date) as well as feedback regarding your responses. The primary investigator will be available before and after the delivery of the intervention each session to help answer any questions and provide emotional support you may need.

Confidentiality: Confidentiality of your research records will be strictly maintained throughout the study using the following procedures:

- Your name will not be connected to their results or to their responses on the questionnaires. Instead, a number will be used for identification purposes.
- Consent forms will be kept separate from data to make sure that your name and identity will not become known or linked with any information provided.
- Information that would make it possible to identify you or any other participant will only be accessible to the principal investigator, her faculty sponsor, or research assistants.
- Intervention sessions will be video-recorded for quality assurance. Video recordings will only be accessible to the principal investigator, her faculty sponsor, and research assistants. You may request a video recording of your sessions at any time.
- Your responses will be kept confidential with the following exception: the principal investigator is required by law to report to the appropriate authorities if there is suspicion of harm to himself/herself, to other children, or to others.

Your participation in this study is entirely voluntary. You may refuse to participate in this study or withdraw from this study at any time without penalty. You also have the right to skip or not answer any questions with which you are uncomfortable.

If there is anything about the study or your participation that is unclear or that you do not understand, or if you have any questions or wish to report a research-related problem, you may contact Ms. Alyssa Goodman, M.S. via email at alyssa.goodman19@stjohns.edu or the faculty sponsor, Dr. Lauren Moskowitz, at (718) 990-6418 or via email at moskowil@stjohns.edu. For questions about yours and your child's rights as a research participant, you may contact the Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chairperson, digiuser@stjohns.edu, at 718-990-1955 or 718-990-1440.

Statement of Consent:

I have read the above information. I have asked any questions I had regarding this study and they have been answered to my satisfaction. I consent for my child to participate in the present study.

Name of Participant: _____ Age: _____
(please print)

Signature of Participant: _____ Date: _____

Address of Participant:

Daytime Phone Number: _____ Evening Phone Number:

Regarding the use of video-recordings, please check one of the following options:

I give permission for the video-recordings to be used in professional presentations and/or during classes (academic instruction). I understand that I will not receive compensation for the making or presentation of these recordings.

I would consider giving permission for the video-recordings to be used in professional presentations and/or academic instruction, but I need to know more about how you would use them.

I give permission for the video-recordings to be used by project staff *only* (Alyssa Goodman, Dr. Moskowitz, and research assistants in her lab) and NOT used for professional presentations or academic instruction.

APPENDIX D

Social Validity Questionnaire: Pre-Intervention

Participant : Taylor Swift _____

Date : 10/23/2023

Please read the following statements and circle the response that most accurately describes how you feel:

I feel confident that I will be able to ask someone out on a date.

1 2 3 4 5

Strongly Disagree. Slightly Disagree. Not sure Slightly Agree Strongly Agree

I feel confident that if I ask someone on a date and they say yes, I will be able to respond appropriately.

1 2 3 4 5

Strongly Disagree. Slightly Disagree. Not sure Slightly Agree Strongly Agree

I feel confident that if I ask someone on a date and they say no, I will be able to respond appropriately.

1 2 3 4 5

Strongly Disagree. Slightly Disagree. Not sure Slightly Agree Strongly Agree

I feel nervous about asking someone on a date.

1 2 3 4 5

Strongly Disagree. Slightly Disagree. Not sure Slightly Agree Strongly Agree

I feel confident in my dating skills.

1 2 3 4 5

Strongly Disagree. Slightly Disagree. Not sure Slightly Agree Strongly Agree

I am likely to ask someone out on a date.

1 2 3 4 5

Strongly Disagree. Slightly Disagree. Not sure Slightly Agree Strongly Agree

APPENDIX E

Social Validity Questionnaire: Post-Intervention

Participant : TAYLOR SWIFTDate : 1/25/24

Please read the following statements and circle the response that most accurately describes how you feel:

I feel confident that I will be able to ask someone out on a date.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

I feel confident that if I ask someone on a date and they say yes, I will be able to respond appropriately.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

I feel confident that if I ask someone on a date and they say no, I will be able to respond appropriately.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

I feel nervous about asking someone on a date.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

I feel confident in my dating skills.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

I am likely to ask someone out on a date.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

I enjoyed the videos and role-plays.

1	2	3	4	5
<i>Strongly Disagree</i>	<i>Slightly Disagree</i>	<i>Not sure, Neutral</i>	<i>Slightly Agree</i>	<i>Strongly Agree</i>

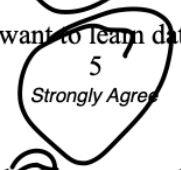
The videos and role-plays helped teach me dating skills.

1 2 3 4 5
Strongly Disagree *Slightly Disagree* *Not sure, Neutral* *Slightly Agree* *Strongly Agree*



I would recommend the videos and role-plays to others who want to learn dating skills.

1 2 3 4 5
Strongly Disagree *Slightly Disagree* *Not sure, Neutral* *Slightly Agree* *Strongly Agree*



Do you have any comments about your experience in the study that you would like to share?

I LOVE IT

APPENDIX F

Asking On Date Task Analysis

Step	Y/N
Looks at face of conversation partner for 1 second and orients body toward partner	
Says an appropriate salutation (e.g., hi, hey, hello)	
Asks conversation partner how they are doing	
Looks at partner's face for one second	
Waits for partner to respond by remaining oriented to them	
Acknowledges partner response with question or related statement (e.g., "cool", "great")	
Looks at partner's face for one second	
Asks question related to date (e.g. Do you like funny movies? Do you like mini golf?)	
Waits for partner to respond by remaining oriented to them	
Acknowledges partner response by expressing interest (e.g. "that's cool", "me too", "great")	

Looks at partner's face for one second	
Asks partner if they want to do the related activity with them (may state that this is a date)	
Looks at partner's face for one second	
Waits for partner to respond by remaining oriented to them	

APPENDIX G

Responding to Acceptance Task Analysis

Step	Y/N
Asks partner if they are available on a specific day or states day of availability	
Looks at partner's face for one second	
Waits for partner to respond by remaining oriented to them	
Comments on partner's availability (e.g. "Great!", "awesome!")	
Sums up information about the date	
Looks at partner's face for one second	
Exits conversation with appropriate ending (e.g. "I'll see you later", "I have to go")	
Looks at partner's face for one second	
Waves and/or says goodbye	

APPENDIX H

Handling Rejection Task Analysis

Step	Y/N
Orients to partner	
Verbally accepts rejection (e.g. “no problem”, “that’s okay”)	
Looks at partner’s face for one second	
Exits conversation with appropriate ending (e., “I’ll see you later”, “I have to go”)	
Waves and/or says goodbye	

APPENDIX I

Simplified Steps for Participant

Asking Someone on a Date: YES!

<u>Step</u>	<u>Did I do it? How did it go?</u>
Say hi and check my body (am I too close? Too far? Am I facing my conversation partner? Am I looking at them?)	
Ask how they are doing (How are you? What's going on? What's up? or similar)	
Listen to what they say and check my body	
Respond to what they said with a comment (That's cool! Me too! or similar)	
Ask if they want to go out and do the activity with you	
Listen to what they say and check my body	
Ask if they would like to go on a specific day	
Listen to what they say and check my body	
Summarize the date details (So I'll see you Saturday at the movies!)	
Say you have to go (or something similar) and goodbye	

If They Say No:

Skill	How did it go?
Stay calm and check my body and my voice (Am I still facing them? Am I too close? Am I too loud or quiet?)	
Let them know that you heard them and you're okay (e.g., "No problem" or "No worries" or something similar)	
Give a cover story, say goodbye, and walk away (Well I have to go home now, Time to go, I'll see you later, or similar)	

APPENDIX J

Skill Descriptions

Asking Someone On Date

- a. Appropriately greets: verbally acknowledges conversation partner with an appropriate salutation (e.g., Hi, hey) paired with orientation of body toward the conversation partner with integration of eyes looking at the partner's face for at least one second
- b. Initiates small talk related to date: (e.g., "I heard about a great movie!", "Do you like bowling?")
- c. Asks partner to join them for an activity: proposes a specific activity (e.g., seeing a movie, going ice-skating) by verbally suggesting the partner accompany them.

Handling Acceptance

- a. Suggests day and time: If the partner expresses interest, verbally suggests a specific day/time frame (e.g. "How does this Saturday work for you?")
- b. Restates/summarizes plan for date (e.g. "See you at the movies this Saturday!")
- c. Exits conversation in friendly manner: Verbally indicates that the conversation is ending using an appropriate good-bye phrase such as "I have to go", "See you later" or something similar.

Handling Rejection

- a. Stays calm: Maintains an appropriate volume and engages in appropriate body language similar to body language demonstrated previously (remaining oriented to partner, maintains an appropriate distance)
- b. Verbally accepts rejection: Verbally indicates that the rejection was heard and understood by saying “that’s ok”, “no problem”, or something similar and does not ask again
- c. Exits conversation in friendly manner: Verbally indicates that the conversation is ending using an appropriate good-bye phrase such as “I have to go”, “See you later” or something similar.

APPENDIX K

Skill Appropriateness Rating Scale

Video Code: _____

Skill: Asking Out Handling Rejection Handling Acceptance

How appropriately did the participant complete this skill?

1 2 3 4

1 = Not at all appropriate: Followed one or fewer behavioral steps/guidelines and appeared extremely socially awkward/uninterested, engaged in many odd/unusual/inappropriate behaviors

2 = Some/moderate appropriateness: Followed some behavioral steps/guidelines and appeared moderately uncomfortable/awkward, engaged in some odd/unusual/inappropriate behaviors

3 = Mostly appropriate: Followed most behavioral steps/guidelines and appeared mostly comfortable/interested and slightly awkward, engaged in few odd/unusual/inappropriate behaviors

4 = Very appropriate: Followed all behavioral steps/guidelines and appeared comfortable and interested in the social interaction, engaged in no more than one odd or unusual/inappropriate behavior

APPENDIX L

Procedural Integrity Checklist: First Intervention

Component	Completed Yes/No
First Video Model Shown	
Video Paused After "Asking Out"	
First Target Behavior Role-Played & Recorded	
Role-Play Played for Participant	
Corrective Feedback Provided for Target Behavior Only	
Feedback Acknowledged by Participant	
Second Role-Play for First Skill Recorded	

___ / 7 Components Completed

APPENDIX M

Procedural Integrity Checklist: Second Intervention

Session # ____

Component	Completed Yes/No
First Video Model Shown in Full	
First Skill Role-Played & Recorded	
Role-Play Played for Participant	
Corrective Feedback Provided	
Feedback Acknowledged by Participant	
Second Role-Play for First Skill Recorded	

__ / 6 Components Completed

APPENDIX N

Procedural Integrity Checklist: Full Intervention

Session # ____

Component	Completed Yes/No
First Video Model Shown	
First Skill Role-Played & Recorded	
Role-Play Played for Participant	
Corrective Feedback Provided	
Feedback Acknowledged by Participant	
Second Role-Play for First Skill Recorded	
Second Video Model Shown	
Second Skill Role-Played & Recorded	
Second Role-Play Played for Participant	
Corrective Feedback Provided for Second Skill	
Second Role-Play for Second Skill Recorded	

__ / 11 Components Completed

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