

5-21-2018

Improv Theater as a Social Cognition Intervention for Autism

Daniel Wendler
dwendler14@georgefox.edu

This research is a product of the Doctor of Psychology (PsyD) program at George Fox University. [Find out more](#) about the program.

Recommended Citation

Wendler, Daniel, "Improv Theater as a Social Cognition Intervention for Autism" (2018). *Doctor of Psychology (PsyD)*. 251.
<https://digitalcommons.georgefox.edu/psyd/251>

This Dissertation is brought to you for free and open access by the Theses and Dissertations at Digital Commons @ George Fox University. It has been accepted for inclusion in Doctor of Psychology (PsyD) by an authorized administrator of Digital Commons @ George Fox University. For more information, please contact arolfe@georgefox.edu.

Improv Theater as a Social Cognition Intervention for Autism

by

Daniel Wendler

Presented to the Faculty of the
Graduate School of Clinical Psychology

George Fox University

in partial fulfillment

of the requirements for the degree of

Doctor of Psychology

in Clinical Psychology

Newberg, Oregon

May 21, 2018

Approval Page

Improv Theater as a Social Cognition Intervention for ASD

Daniel Wendler M.A.

Graduate Department of Clinical Psychology

George Fox University

as a dissertation for the PsyD

Signatures:

Celeste Jones, PsyD

Celeste Jones, PsyD, Chair

Members:

Glena K Andrews, PhD

Glena Andrews, PhD

Kathleen Gathercoal

Kathleen Gathercoal, PhD

Date: 06/13/18

Improv Theater as a Social Cognition Intervention for Autism

Daniel Wendler

Graduate School of Clinical Psychology

George Fox University

Newberg, Oregon

Abstract

Individuals with Autism Spectrum Disorder (ASD) experience impairment in social cognition, which contributes to a variety of challenges for individuals with ASD, including elevated risks of loneliness, depression and anxiety. For this reason, various interventions have been developed to improve social ability in ASD populations. However, many existing interventions lack strong research support, or are inaccessible to many individuals with ASD due to high financial cost. Therefore, a need exists for affordable, effective psychosocial interventions for ASD that are widely accessible. One potential intervention is improvisational theater training (improv). Improv training for youth and young adults with ASD is already provided at multiple theaters across the US, and the current study collected information on one such program, measuring change in participant ratings of social ability, depression, anxiety, loneliness, and growth mindset as a result of participation. Participants reported a significant

reduction in their perceptions of nervousness and being left out after completing the improv theater training, suggesting that improv theater decreases nervousness and feelings of exclusion among individuals with ASD. Participants also reported a significant increase in their perception of lacking companionship, suggesting that improv theater increases participant desire for companionship among individuals with ASD. Reliable Change Index analysis suggests that younger participants, male participants, and participants with greater social impairment were more likely to evidence reliable change as a result of improv theater training. Finally, positive correlations were found between social impairment and ratings of depression and loneliness and negative correlations were found between growth mindset and ratings of depression and loneliness. These findings provide preliminary evidence that suggests improvisational theater may be an effective intervention for reducing anxiety and nervousness among individuals with ASD.

Keywords: Autism spectrum disorder (ASD), improv theater, theater, social cognition, psychosocial intervention, loneliness in ASD, depression in ASD, growth mindset.

Table of Contents

Approval Page.....	ii
Abstract.....	iii
List of Tables	ix
Chapter 1: Introduction.....	1
The Impact of Autism.....	1
Current Interventions	2
Interventions for Social Functioning.	2
Early intensive behavioral intervention	3
Social skills groups	4
UCLA Program for the Education and Enrichment of Relational Skills (PEERS program)	5
Social Cognition and Interaction Training (SCIT)	6
Virtual reality	6
Animal-assisted intervention	7
Interventions for Loneliness in ASD	7
Interventions for Depression in ASD.....	8
Interventions for Anxiety in ASD.....	9
A Potential Intervention: Improvisational Theater	10

IMPROV THEATER AS A SOCIAL COGNITION INTERVENTION FOR AUTISM	vi
Traditional theater for ASD	11
Improv theater with early-stage dementia.....	11
Improv theater and divergent thinking.....	12
Hypotheses	13
Chapter 2: Methods.....	14
Participants.....	14
Materials	14
Parent Measures	14
Student Measures	15
Demographic Information Survey	15
Modified Growth Mindset Assessment (mGMA).	15
Patient Health Questionnaire 4 (PHQ-4; Kroenke et al 2009).....	16
Social Responsiveness Scale, Second Edition (SRS-2; Constantino & Gruber (2012).....	16
UCLA-3 Three Item Loneliness Scale (UCLA-3; Hughes, Waite, Hawkley, & Cacioppo, 2004).....	16
Procedure	17
Chapter 3: Results.....	18
Descriptives.....	18

Correlations.....	18
SRS-2	18
mGMA	18
UCLA-3	19
Time One Versus Time Two.....	21
Reliable Change Index	24
UCLA-3 Item Two- Leftout.....	24
PHQ-4 Item One- Nervous	25
Chapter 4: Discussion	26
Limitations	29
Measure completion rates	29
Sample size	30
Control group	31
References.....	32
Appendix A Informed Consent.....	41
Appendix B Demographic Questionnaire.....	42
Appendix C PHQ-4 Assessment.....	43
Appendix D Modified Growth Mindset Assessment.....	44
Appendix E Social Responsiveness Scale - 2.....	45

IMPROV THEATER AS A SOCIAL COGNITION INTERVENTION FOR AUTISM	viii
Appendix F UCLA-3 Loneliness Scale	48
Appendix G Curriculum Vitae.....	49

List of Tables

Table 1	Descriptives for Age and Scores.....	19
Table 2	Correlations for Scores After Linear Interpolation.....	22
Table 3	Pre-post Differences	23
Table 4	Reliable Change Index.....	25

Chapter 1

Introduction

The Impact of Autism

Autism Spectrum Disorder (ASD) is a condition that affects many people worldwide, with national prevalence rates in recent years reaching approximately 1% of the population (DSM, American Psychiatric Association [APA], 2013). The defining features of ASD are impairment in reciprocal social interaction as well as restricted and repetitive patterns of behavior or interests (DSM-5, 2013). The lifetime cost of supporting an individual with ASD in the US reaches \$2.4 million dollars for people with a comorbid intellectual disability, and \$1.4 million dollars for people with ASD without an intellectual disability, highlighting the importance of affordable interventions. (Buescher, Cidav, Knapp, & Mandell, 2014).

In addition to the financial impact, ASD has been shown to have an impact on quality of life. In a meta-analysis, Van Heijst and Geurts (2014) found that quality of life for individuals with ASD was markedly lower than individuals without ASD ($d = -0.96$), with specific impacts on reduced social functioning, fewer friends, poorer physical health, and less satisfying sexual relationships. Kamio, Inada and Koyama (2012) found that even people with high-functioning ASD had a significantly lower quality of life compared to typically developing peers.

Highlighting the unique challenges of ASD, Cottenceau et al. (2012) found that adolescents with ASD had a lower quality of life both when compared to typical peers and when compared to diabetic peers, and Arias et al. (2018) found that quality of life was lower for children with both ASD and intellectual disability, compared to peers who only had intellectual disability. Another

study (Lasgaard et al., 2010) found higher rates of loneliness in adolescent boys with ASD as compared to the general population. Moreover, people with ASD continue to experience painful consequences from social isolation, with Mazurek (2014) finding that loneliness was correlated with higher anxiety and depression among individuals with ASD even after controlling for autistic symptoms. In addition, Hudson, Hall, and Harkness (2018) found people with ASD to be four times more likely to have Major Depressive Disorder than the general population. Regarding anxiety, a recent meta-analysis found that individuals with ASD were more likely to have anxiety than the general population, and risk increased with increased IQ scores (Van Steensel & Heeman, 2017).

Impacts on quality of life have not only been shown for the individual with ASD, but also for caregivers of people with ASD. McStay, Dissanayake, Scheeren, Koot and Begeer (2013) found that parents of children with ASD report a lower quality of life and higher stress levels than parents of typically developing children. Parents of children with ASD are also at high risk for depression, with one study finding that 40% of parents of children with ASD reported high levels of depressive symptoms (Hoefman et al., 2014). In sum, while individuals with ASD bring unique gifts and strengths, interventions to reduce the impairments of ASD have the potential to significantly improve quality of life for individuals with ASD and their caregivers.

Current Interventions

Interventions for Social Functioning. Because one of the primary features of ASD is impairment in social functioning including social communication (*DSM-5*, 2013), improving social functioning for individuals with ASD is a major focus of research. A summary of research on existing social functioning interventions is provided below, including findings on early

intensive behavioral intervention, social skills groups, UCLA PEERS program, and Social Cognition and Interaction Training as well as alternative interventions such as virtual reality, animal-assisted intervention, and nasal oxytocin.

Early intensive behavioral intervention. Early intensive behavioral intervention (sometimes referred to as applied behavioral analysis) is a common and well-known treatment for children with ASD, which involves intensive training between a child with ASD and a trained provider (Reichow, 2011). A review of five meta-analytic studies indicated strong evidence that early intensive behavioral intervention leads to gains in IQ and/or adaptive functioning for children with ASD (Reichow, 2011). However, a meta-analysis of studies of youth who received early intensive behavioral intervention as children found mixed evidence for the long-term benefit of early intensive behavioral intervention (Starr, Popovic & McCall, 2016). While the studies suggested that many children did make progress in many areas as a result of early intensive behavioral intervention, some children regressed once the treatment was no longer provided, and ASD symptoms remained for many students in the follow-up studies. The authors suggest that early intensive behavioral intervention may need to be applied across the lifespan in order to maintain gains. However, as suggested by the word “early” in the title, these interventions are designed for children, and no research was found on its use among adolescents or adults with ASD. Moreover, because this method of treatment often requires working with a professional several hours a week for multiple years with the child, it is cost-prohibitive for many families. A final limitation of this approach is more anecdotal, with popular media indicating that some adults with ASD embrace their identity as a person with ASD and report experiencing this intervention as “cruel” and “harmful” in that it attempts to suppress traits

associated with ASD (Devita-Raeburn, 2016). As a whole, early intensive behavioral interventions have shown some of the most robust effectiveness in early childhood populations, but gains may not be long-term, lack research in later age ranges, and involve significant financial cost.

Social skills groups. Social skills groups are another common social intervention for individuals with ASD. One meta-analysis (Reichow, 2011) examined the evidence supporting social skills groups for individuals with ASD. For the purpose of the meta-analysis, the authors defined social skills groups as group therapy sessions with two to six participants with ASD and one to three licensed therapists. The authors of this study found some evidence that these groups improved social competence for children and adults but cautioned that more research is necessary before drawing strong conclusions. Moreover, while group therapy may be more cost-effective than individual therapy, it may not be covered by insurance panels, limiting the number of patients who can afford to access this treatment.

A more recent meta-analysis (Wolstencroft et al., 2018) defined social skills groups more broadly, including groups with a more therapeutic focus as well as groups with a more didactic focus. This meta-analysis also found evidence that these groups improved social functioning for individuals with ASD but noted that all studies in their meta-analysis relied on self-reports that were prone to the expectancy bias. Finally, Hillier et al., (2018) examined a social skills group for college students with ASD that also covered topics such as time and stress management. This study found significant reductions in loneliness and anxiety, as well as significant increases in self-esteem. Therefore, some evidence for the efficacy of these groups exists, but further research

using more rigorous data collection methods would be necessary to gain greater clarity on the efficacy of these interventions.

UCLA Program for the Education and Enrichment of Relational Skills (PEERS program). The PEERS program is a specific social skills group intervention for teenagers with ASD in which teens and their parents receive social skills training in a group setting from a clinical psychologist. An initial study found evidence that this intervention improved social functioning both immediately following treatment and at a 14-week follow up (Laugeson, Frankel, Gantman, Dillon, & Mogil 2011), and a later study found similar results (Laugeson, Gantman, Kapp, Orenski, & Ellingsen 2015). Additional studies also found improvements in social ability and other domains social anxiety (McVey et al., 2016) and broader behavioral and emotional domains (Lordo et al., 2017). These findings yield strong evidence that the UCLA PEERS program is an effective intervention for social skills development. In addition, it is one of few researched interventions designed for adolescents rather than children.

While certainly promising as an effective intervention, the PEERS program has been criticized for “[reinforcing] social arrangements that require individuals with ASD to attempt to learn, memorize, and deploy social rules in order to pass as non-autistic” (Bottema-Beutel, Park, & Kim 2018, p. 959). This article voiced concern about the potential for individuals with ASD to internalize stigma about their identity as a person with autism, or to experience challenges in authentic connection with others, having been trained to suppress natural methods of expression. Therefore, the PEERS program appears to be an effective intervention for youth with ASD, but with some important limitations that call for further refinement or for new interventions that avoid these limitations.

Social Cognition and Interaction Training (SCIT). SCIT is another manualized group intervention originally designed to improve social cognition in patients with psychotic disorders (Turner-Brown, Perry, Dichter, Bodfish, & Penn, 2008). Social cognition is seen as distinct from the more concrete social behaviors taught in social skills training, and instead involves training individuals on thinking patterns and perspective-taking, skills that enable one to intuit or deduce appropriate social behaviors. Preliminary evidence has demonstrated that SCIT is effective in improving social cognition for individuals with Schizophrenia (Roberts et al., 2014) and Bipolar Disorder (Lahera et al., 2013). However, limited research has been done to apply this intervention for individuals with ASD. Only one study has been published on the efficacy in a sample with ASD (Turner-Brown et al., 2008). While the study included a small sample size ($n = 11$), a significant effect size was found ($d = 0.94$).

Virtual reality. While the interventions above have involved work with a mental health professional, still other interventions are being developed in efforts to broaden the reach of interventions to those who lack access to an appropriately-trained mental health professional. For instance, recent advancements in technology have created the opportunity for social cognition interventions involving virtual reality. Virtual reality interventions provide an avenue in which individuals with high-functioning ASD can practice difficult or individually challenging social interactions in a less-anxiety producing platform (Didehbani, Allen, Kandalaf, Krawczyk, & Chapman, 2016). Studies have found that virtual reality interventions resulted in improvements in social cognition for individuals with ASD, with one study providing the intervention to young adults (Kandalaf, Didehbani, Krawczyk, Allen & Chapman 2012) and other studies providing

the intervention to children (Didehbani et al., 2016; Ke & Im, 2013). Until further developed, accessibility remains an issue for virtual reality interventions, however.

Animal-assisted intervention. Animal-assisted therapy is founded on the principle that animals can help people learn to bond and form social attachments. A systematic review of the research on animal-assisted intervention for ASD found some preliminary evidence that this treatment resulted in improved social functioning and decreased ASD-related behaviors (O’Haire, 2012). However, methodological concerns were present in many of the studies, consistent with O’Haire’s recommendation that more rigorous research is needed before drawing firm conclusions.

Nasal oxytocin. Oxytocin is a naturally-occurring hormone that has been hypothesized to facilitate bonding and social connection, and has been implicated research on autism. Some older studies have found that nasal oxytocin improves social functions such as emotional regulation (Guastella et al., 2010) and affective speech comprehension (Hollander et al., 2007). However, generalization from these findings is difficult due to small sample sizes (largest $n = 16$) and limited effect sizes. More recent studies show mixed results, with one study finding no effect from nasal oxytocin spray for subjects with ASD (Dadds et al., 2014), one study finding minor results that only emerged at the one-month follow up (Bernaerts, Steyaert, & Alaerts 2017) and a final study that reported significant improvements in social ability (Parker et al., 2017). Therefore, nasal oxytocin requires future research before a firm conclusion about its efficacy can be drawn.

Interventions for Loneliness in ASD. Despite higher rates of loneliness for adolescent boys with ASD (Lasgaard et al., 2010), a review of the research found no studies on

interventions targeting loneliness for individual with ASD. A meta-analysis on interventions for loneliness in the general population found that cognitive-behavioral interventions targeting maladaptive cognitions were the most effective (Masi, Chen, Hawkey, & Cacioppo, 2011). Additionally, within the ASD population, one study found that online gaming was associated with less loneliness (Sundberg, 2018).

Interventions for Depression in ASD. Besides interventions aimed at improving social functioning for individuals with ASD, other interventions that have been studied in samples with ASD have instead focused on improving concurrent difficulties with depression, and anxiety. These studies are limited, likely because some of the core characteristics of ASD create potential barriers for the success of psychosocial interventions. Specifically, some difficulties associated with ASD include difficulty identifying thoughts and emotions for oneself or others, difficulty with forming relationship (one of the primary facilitators of therapy success), and difficulty with expressive and/or receptive communication.

While the research on psychosocial depression interventions in ASD is limited, a few pilot studies have looked at group psychotherapy and cognitive-behavioral therapy specific to this population. Specifically, McGillivray and Evert (2014) found that group cognitive behavioral therapy showed some reduction of depressive symptoms and stress for 32 young adults with ASD (ages 15-25), though there was no impact on anxiety. Second, Sizoo and Kuiper (2017) studied cognitive-behavioral therapy in 27 young adults with ASD and mindfulness-based stress reduction in 32 young adults with ASD. Both groups demonstrated reduction in depression and anxiety symptoms, with no main effect regarding group selected. Finally, Santomauro, Sheffield, and Sofronoff (2016) ran a pilot study on a group intervention for depression in 20

adolescents with ASD. Results trended toward significance, though main effects were not significant.

Interventions for Anxiety in ASD. Interventions for anxiety in ASD have more research than those in depression, with general findings demonstrating the effectiveness of cognitive-behavioral therapy in this population. Specifically, Sukhodolsky, Block, Panza, and Reichow (2013) completed a meta-analysis exploring randomized controlled trials. Eight studies were included, involving 469 participants (252 treatment, 217 comparison). Overall effect sizes for clinician- and parent-rated outcome measures of anxiety across all studies were $d = 1.19$ and $d = 1.21$, respectively. Five studies that included child self-report yielded an average $d = 0.68$ across self-reported anxiety. Next, Ung, Selles, Small, and Storch (2015) completed a meta-analysis of cognitive-behavioral therapy for youth with high-functioning ASD. Fourteen studies were included, involving 511 participants, and findings boasted a statistically significant pooled treatment effect size, ($g = -0.47, p < .001$).

Potential Impact of Growth Mindset

There is growing interest in “growth mindset,” a term used to describe the belief that intelligence and other core abilities are malleable. Research has indicated that students with a growth mindset are more likely to improve their grades in the first two years of junior high, and that targeted interventions designed at fostering growth mindset increased classroom motivation (Blackwell, Trzesniewski & Dweck, 2007). In addition, single-session interventions targeting growth mindset were found to speed recovery from a lab-based social stressor (Schleider & Weisz, 2016) and to decrease depression and anxiety after a nine-month follow-up (Schleider & Weisz, 2018). While no research had been conducted evaluating the possible effects of a growth

mindset on social development, the current researcher postulated that growth mindset towards social ability may affect social development in the same way that a growth mindset towards intelligence affected academic development as well as resistance to depression and anxiety.

A Potential Intervention: Improvisational Theater

This study seeks to add to existing research on social interventions for individuals with ASD, exploring the impact of improvisational (improv) theater on social and emotional functioning in this population. Improv is a form of theater in which the performance is improvised by the actors in the moment. There is no preparation, rehearsal or script. There is a strong similarity between the unscripted nature of improv theater and natural social interaction, as both require the individual to respond quickly to the actions of others. Bermant (2013) provides a theoretical justification for the idea that improv theater may be an effective intervention. He highlights similarities between improv theater and psychotherapeutic concepts such as unconditional positive regard and embodiment, and suggests that improv may be inherently therapeutic. His article provides theoretical support for an empirical investigation of improv theater. In addition, improv theater stands to be a more accessible intervention for individuals with ASD as compared to other existing interventions. Theaters across the nation offer improv classes, and several have classes specifically for individuals with ASD. Further, anecdotal evidence supports the effectiveness of these classes (Erbenraut, 2015). Typically, these classes are run by theater teachers, being therefore potentially less expensive than interventions administered by mental health professionals. To date, no quantitative research has yet been done to determine the efficacy of improv theater for social functioning in ASD. However, research has explored the impact of traditional theater in ASD, and the impact of

improv theater in dementia and cognitive processing (divergent thinking). These findings are explored here.

Traditional theater for ASD. Corbett et al., (2015) measured the effect of a ten-week theater intervention on children with ASD. Children with ASD who participated in this intervention learned theater techniques, rehearsed and performed a 45-minute play. Study participants showed improvement in social functioning compared to a waitlist control group, and some improvements maintained even when retested two months later. While this study had a relatively small sample size ($n = 30$, split between treatment and control) and studied traditional scripted theater rather than unscripted improv theater, it provides some preliminary evidence to suggest that theater training can improve social competence. A follow-up study by the same lead author using the same intervention (Corbett, Blain, Ioannou, & Balser (2017) found that theater training also resulted in improvement in trait anxiety (e.g., persistent long-term anxiety levels), with significant decreases in trait anxiety found in the experimental group following the intervention. Conversely, no change was found in state anxiety (e.g., anxiety levels in response to a specific situation) or cortisol levels following this intervention. Despite these limitations, this study provides preliminary evidence to suggest that theater training can improve anxiety in social situations.

Improv theater with early-stage dementia. Stevens (2011) conducted a pilot study where individuals with early stage dementia participated in comedy and improvisational workshops. Qualitative data gathered from interviews with study participants and their caregivers indicated some improvement in sociability and communication as a result of these workshops. While this study is limited by a small sample size ($n = 6$) and a qualitative approach, it provides

preliminary support for the idea of improv theater improving sociability even for people with significant cognitive impairments.

Improv theater and divergent thinking. Lewis & Lovatt (2013) investigated the effects of improvisation on divergent thinking. Divergent thinking is a problem-solving skill that involves coming up with multiple solutions to a problem. Study participants participated in either the experimental condition (20 minutes of improv exercises) or the control group (20 minutes of non-improv exercises) before completing a test of divergent thinking. The study found a significant increase in divergent thinking for participants that participated in the improv exercises. As divergent thinking has impacts on social cognition, participants that improve in their ability to creatively problem solve are likely to also improve in their ability to manage social conflict and compromise. This is especially promising for improving social skills in people with ASD, since rigidity of thinking is a common consequence of ASD (*DSM-5*, 2013).

In sum, traditional theater has been shown to improve anxiety in social situations, and improv theater has been shown to improve divergent thinking and to improve sociability for people with significant cognitive impairment. In combination, these findings suggest that improv theater may have some promising impacts for individuals with ASD, particularly in social and emotional domains. Therefore, this study seeks to explore the impact of improv theater classes on social functioning for individuals with ASD, with secondary exploration of impacts on depressive symptoms, anxiety symptoms, and loneliness.

Hypotheses

It is hypothesized that after a 12-week improv theater class, individuals with ASD will report improved social communication as well as decreases in anxiety, depression, and loneliness.

Chapter 2

Methods

Participants

Data for this study was collected in collaboration with an improv theater class for youth and young adults with ASD provided by an improv theater in the South Central United States. All students who enrolled in the class were invited to participate in the study. In addition, the students' parents were invited to participate in the study. Study participation and completion proved difficult in this sample. However, a total of 21 participants (M age = 15, SD age = 5.11; 14 male, 6 female, 1 genderfluid; 19 European-heritage, 1 Native American, 1 "other") participated in the study. Of these participants, 9 completed both the pretest and the post test, while 12 completed either the pretest or the post test. Any missing data was replaced using linear interpolation. Regarding diagnosis, all participants were identified by their parents as having a diagnosis of ASD. Regarding symptom severity, all but one participant fell within the "severe" range on the Social Responsiveness Scale, Second Edition (SRS-2), which measures symptoms associated with ASD. The remaining participant fell within in the "moderate" range, still typical for individuals with an ASD.

Materials

Parent Measures. An online questionnaire was designed by the researcher and administered to parents. This questionnaire included a demographic information survey, a modified Growth Mindset Assessment, and the Social Responsiveness Scale, Second Edition, Observer Report form.

Student Measures. A printed questionnaire was designed by the researcher and administered in person to students during the improv class by their improv instructor. The printed questionnaire included the informed consent document (see Appendix A), the demographic information survey (see Appendix B), a modified Growth Mindset Assessment (see Appendix D), the Social Responsiveness Scale, Second Edition, Self Report form (see Appendix E), the Four-Item Patient Health Questionnaire for Anxiety and Depression (see Appendix C), and the UCLA-3 Three-Item Loneliness Scale (see Appendix F).

Demographic Information Survey. The demographic information survey was written by the researcher to collect demographic information for statistical analysis. Data recorded includes age, gender, ethnicity, amount of social activity, and source of ASD diagnosis (such as school, psychiatrist, or self-diagnosis.)

Modified Growth Mindset Assessment (mGMA). The Growth Mindset Assessment was developed by the organization Project for Education Research that Scales as a tool that educators could use to assess student perceptions on how basic abilities are developed (innate versus by dedication and hard work). Items are rated on a 4-point Likert scale, from 1 *strongly disagree* to 4 *strongly agree*. While psychometric data for this instrument is not available, items on the Growth Mindset Assessment were derived from items used in foundational research on the growth mindset (Blackwell et al., 2007). As this study was interested in social skills growth, the measure was modified so that the word “intelligence” in any item was replaced with the phrase “social skills.” Internal consistency within the current sample was low at Time One (Cronbach’s Alpha = .43) but improved at Time Two (Cronbach's Alpha = .70).

Patient Health Questionnaire 4 (PHQ-4; Kroenke et al 2009). The PHQ-4 is a self-report screener of anxiety and depression that consists of a two-item depression subscale and a two-item anxiety subscale. Items are rated on a 4-point Likert scale from 1 *Not at all* to 4 *Nearly ever day*. Research indicates it has good reliability and validity (Löwe et al., 2010). Within the current sample, the internal consistency was acceptable (Cronbach's Alpha at Time One = .65, at Time Two = .69).

Social Responsiveness Scale, Second Edition (SRS-2; Constantino & Gruber (2012). The SRS-2 is a 65-item questionnaire that measures social deficits common with ASD (Bruni, 2014). Items are rated on a 4-point Likert scale from 1 “Not True” to 4 “Almost Always True.” Psychometrics have been established by the SRS-2 developers (Constantino & Gruber, 2012). In specific, the SRS-2 was found to have a reliability coefficient of .95 for internal consistency and inter-rater reliability coefficients that ranged from .61 to .92. Validity is quite high, with a specificity value of .92 and a sensitivity value that is also .92. It is available both as a self-report and an observer report measure.

UCLA-3 Three Item Loneliness Scale (UCLA-3; Hughes, Waite, Hawkley, & Cacioppo, 2004). The UCLA-3 is a 3-item self-report measure of loneliness. Items are rated on a 3-point Likert scale from 1 *Hardly Ever* to 3 *Often*. It has reliability of .91 and a good validity, with a .82 correlation between the UCLA-3 and the full R-UCLA loneliness scale (Hughes et al., 2004). Within the current sample, the internal consistency was acceptable (Cronbach's Alpha at Time One = .66, at Time Two = .64).

Procedure

Ethics review and IRB approval was obtained through George Fox University. The improv theater program involved 90-minute improv theater classes, provided weekly for 12 weeks. Pre-test measures were administered by the improv instructor on the first day of class, and post-test measures were administered by the improv instructor on the final day of class. Prior to completing the questionnaires, the consent was reviewed with students and signed (if 18 years or older). For students who were under age 18, parent consent and student assent were obtained by the improv instructor. Students that were age 18 or above provided consent, while students who were below age 18 provided assent. Parents were also invited to complete an online questionnaire providing an observer report of student social ability before and after the improv program, but poor completion rates prevented these data from being used in the statistical analyses ($n = 3$).

Chapter 3

Results

Descriptives

The following measures were administered to all participants: The Social Responsiveness Scale, Second Edition, the Patient Health Questionnaire 4, the Modified Growth Mindset Assessment, and the UCLA-3 3-item Loneliness Scale. To address missing data, linear interpolation was used on all measures, and all data reported in this document reflects the data after linear interpolation. See Table 1 for descriptive data on each variable.

Correlations

Correlations were run between Time One index scores and item scores for the PHQ-4, mGMA, and UCLA-3. Only the index score was included for the SRS-2.

SRS-2. Moderate positive correlations were found between the SRS-2 index score and the following: PHQ-4 Item Three (pleasure; $r = .38$), UCLA-3 Item One (companionship; $r = .45$), UCLA-3 Item Two (leftout; $r = .34$) and the UCLA-3 index ($r = .37$). These findings indicate that participants who evidenced greater social impairment (as measured by the SRS-2) also reported little pleasure or interest in doing things, more self-reported experiences of feeling left out and lacking companionship, as well as more loneliness generally.

mGMA. For the mGMA, a moderate negative correlation was found between mGMA Item One (you can't change your basic social ability) and PHQ-4 Item Four (down; $r = -.40$), indicating that participants who endorsed a greater belief in their potential to change their social negative correlation was found between the mGMA total index score and UCLA-3 Item One

Table 1

Descriptives for Age and Scores

Variable	Time 1 Mean	Time 1 SD	Time 2 Mean	Time 2 SD
Age	15	5.11	N/A	N/A
PHQ Nervous	2.32	1.03	1.68	0.83
PHQ Worrying	1.85	0.95	1.97	.84
PHQ Pleasure	1.35	.79	1.35	.49
PHQ Down	1.85	.95	1.59	.54
PHQ Sum	7.38	2.65	6.59	1.99
UCLA-3 Companionship	1.47	0.44	1.94	0.81
UCLA-3 Left Out	2.06	0.70	1.47	0.48
UCLA-3 Isolated	1.65	0.68	1.85	0.91
UCLA-3 Sum	5.18	1.37	5.26	1.73
Growth New Things	2.12	0.75	2.29	0.66
Growth Something About You	2.32	0.55	2.35	0.84
Growth Certain Level	2.38	0.66	2.09	0.57
Growth Sum	6.94	1.60	6.74	1.66

(companionship; $r = -.48$), indicating that participants who endorsed an overall higher growth mindset were less likely to endorse a lack of companionship. Finally, a moderate negative correlation was found between mGMA Item Three (you have a certain level of social ability and can't change it) and UCLA-3 Item One (companionship; $r = -.40$), indicating that participants who believed they could change their level of social ability were less likely to feel they lacked companionship.

UCLA-3. For the UCLA-3, moderate positive correlations were found between UCLA-3 Item One (lack companionship) and PHQ-4 Item Four (down; $r = .36$) and the overall PHQ-4

score ($r = .30$). This indicates that participants who felt they lacked companionship were more likely to also endorse feeling down, depressed or hopeless (see Table 2).

Next, moderate positive correlations were found between UCLA-3 Item Two (left out) and PHQ-4 Item One (nervous; $r = .32$) and the overall PHQ-4 score ($r = .44$). This indicates that participants who endorsed a greater perception of feeling left out were more likely to also endorse experiences of feeling nervous, anxious, and on edge, as well as a greater overall experience of having problems with mood or anxiety. Also, large correlations were found between UCLA-3 Item Two (left out) and PHQ-4 Item Two (worrying; $r = .57$) and PHQ-4 Item Four (down; $r = .55$), indicating that participants who endorsed a greater perception of feeling left out were more likely to also endorse experiences of not being able to control or stop worrying, and experiences of feeling down, depressed or hopeless (see Table 2).

In addition, large positive correlations were found between UCLA-3 Item Three (isolated) and PHQ-4 Item One (nervous; $r = .53$), PHQ-4 Item Two (worrying; $r = .72$), PHQ-4 Item Four (down; $r = .77$) and the overall PHQ-4 score ($r = .62$). This indicates that participants who endorsed a greater experience of feeling isolated were also more likely to endorse a greater experience of feeling down, depressed or hopeless, a greater experience of being unable to control or stop worrying, a greater experience of feeling down, depressed or hopeless, as well as a greater overall experience of having problems with mood or anxiety (see Table 2).

Finally, large positive correlations were found between the overall UCLA-3 score and PHQ-4 Item Two (worrying; $r = .63$), PHQ-4 Item Four (down; $r = .77$) and the overall PHQ-4 score ($r = .62$). This indicates that participants who endorsed a higher level of loneliness overall were more likely to also endorse a greater experience of being unable to control or stop

worrying, a greater experience of feeling down, depressed or hopeless, and a greater overall experience of having problems with mood or anxiety (see Table 2).

Time One Versus Time Two

Due to poor completion rates on the SRS-2, as well as the propensity for participants to complete either the pre-test or the post-test on this measure, it was not possible to compare Time One and Time Two scores for the SRS-2. The other measures were significantly shorter (three to five items as compared to 65 on the SRS-2), and completion rates were much higher. Thus, the following analyses explore differences between Time One and Time Two on anxiety and depression (PHQ-4), loneliness (UCLA-3), and growth mindset (mGMA). Differences between Time One and Time Two were explored at the index and item level for the PHQ-4, the UCLA-3, and the mGMA in order to determine intervention effects. For these comparisons, repeated-measures *t*-tests were used, including effect size (d') and power calculations. Significant differences ($p < .05$) were found on three variables (see Table 3).

First, a significant difference (with a moderate effect size) was found on Item One of the PHQ-4 (nervous, $t(df= 16) = 2.72, p = .02, d' = .66$). Participants rated their subjective experience of nervousness as lower after the improv theater intervention compared to before. This suggests that improv theater reduced participant experiences of feeling nervous, anxious or on edge (see Table 3).

Next, a significant difference (with a moderate effect size) was found on Item One of the UCLA-3 (companionship, $t(df= 16) = -2.67, p = .02, d' = .65$). Participants rated their subjective experience of lacking companionship as higher after the improv theater intervention as compared

Table 2

Correlations for Scores After Linear Interpolation

Variable	SRS	PHQ 1	PHQ 2	PHQ3	PHQ 4	PHQ- T	UCLA 1	UCLA 2	UCLA 3	UCLA- T	GM1	GM2	GM 3
PHQ 1 Nervous	.18	-	-	-	-	-	-	-	-	-	-	-	-
PHQ 2 Worrying	.03	.71	-	-	-	-	-	-	-	-	-	-	-
PHQ 3 Pleasure	.38	.26	-.28	-	-	-	-	-	-	-	-	-	-
PHQ 4 Down	.20	.61	.83	-.22	-	-	-	-	-	-	-	-	-
PHQ Total	.29	.93	.80	.30	.78	-	-	-	-	-	-	-	-
UCLA-3 1 Companionship	.45	.15	.12	.21	.36	.30	-	-	-	-	-	-	-
UCLA-3 2 Left Out	.34	.32	.57	-.19	.55	.44	.26	-	-	-	-	-	-
UCLA-3 3 Isolated	.10	.53	.72	-.17	.84	.67	.30	.60	-	-	-	-	-
UCLA-3 Total	.37	.44	.63	-.08	.77	.62	.64	.82	.84	-	-	-	-
Growth 1 New Things	.05	.03	-.23	.24	-.4	-.14	-.14	.05	-.25	-.15	-	-	-
Growth 2 About You	-.24	.09	.15	-.23	-.08	-.20	-.20	.02	-.01	-.08	.62	-	-
Growth 3 Certain Level	-.07	-.05	-.18	-.09	-.13	-.48	-.48	.01	-.08	-.22	-.03	.05	-
Growth Total	-.11	-.18	-.14	-.02	-.31	-.40	-.40	.04	-.18	-.22	.78	.78	.51

to before. Two possible hypotheses for these results are discussed in the discussion section below. Finally, a significant difference (with a moderate effect size) was found on Item Two of the UCLA-3 (Left Out, $t(df = 16) = 3.02, p = .008, d' = .73$). Participants rated their subjective experience of feeling left out as less frequent after the improv theater intervention as compared to before. This suggests that the improv theater intervention decreased participant experiences of feeling left out (see Table 3).

Table 3

Pre-post Differences

Variable	Mean	SD	D'
PHQ Nervous	0.65	0.98	.66 (m)
PHQ Worrying	-0.12	0.78	.02
PHQ Pleasure	0.00	0.93	.00
PHQ Down	0.26	0.95	.28(s)
PHQ Sum	0.79	1.98	.40(s)
UCLA-3 Companionship	-0.47	0.73	-.65(m)
UCLA-3 Leftout	0.59	0.80	.73(m)
UCLA-3 Isolated	-0.21	0.73	-.28(s)
UCLA-3 Sum	-0.09	1.38	-.06
Growth New Things	-0.18	0.89	-.20
Growth Something About You	-0.03	0.87	-.03
Growth Certain Level	0.29	1.01	-.28(s)
Growth Sum	0.21	1.67	.02

Note: (s) is a small effect $\geq .1$, (m) is a moderate effect $\geq .3$ (l) is a large effect $\geq .5$.

Reliable Change Index

Time One and Time Two mean comparisons indicated which variables showed change as a result of the intervention. Building on those findings, Reliable Change Index analyses were used to specify participant variables that affected change. The Reliable Change Index (RCI) was calculated for the three outcome variables listed above in which significant change was found (PHQ-4 Item One- nervous, UCLA-3 Item One- companionship, and UCLA-3 Item Two- left out). To calculate the RCI, reliability coefficients (Cronbach's Alpha) were used for each measure (PHQ-4 Time One = .65, PHQ-4 Time Two = .69, UCLA-3 Time One = .66, UCLA-3 Time Two = .64). Those who evidenced change greater than twice the standard error of measurement (SEM) were considered to have evidenced reliable change. None of the independent variables tested (SRS-2 score, gender, age) affected change on UCLA-3 Item One-companionship.

UCLA-3 Item Two- Leftout. Findings indicated that younger participant age was associated with reliable change in UCLA-3 Item Two (leftout, RCI = -.49). This suggests that younger individuals were more likely to evidence reliable change. Higher overall score on the SRS-2 time one was also associated with reliable change in UCLA-3 Item Two (leftout, RCI = .47). This suggests that individuals with a higher degree of social impairment were more likely to evidence reliable change. In addition, male gender was associated with reliable change on UCLA-3 Item Two (leftout, RCI = .43). This suggests that male participants were more likely to evidence reliable change on feeling left out. Finally, mGMA total scores at Time Two were associated with reliable change on UCLA-3 Item Two (leftout, RCI = -.31). This suggests that

participants who had a higher growth mindset at the end of the intervention were more likely to evidence reliable change in their experiences of being left out (see Table 4).

PHQ-4 Item One- Nervous. Only one participant characteristic, male gender, was associated with reliable change on PHQ-4 Item One- nervous (RCI = .43; see Table 4). This finding suggests that male participants were more likely to evidence reliable change on feeling nervous than female participants.

Table 4

Reliable Change Index

Variable	RCI Both	Reliable Change?	RCI PHQ-4 Nervous	Reliable Change?	RCI UCLA-3 Left Out	Reliable Change?
Age	-.16	No	.25	No	-.49	Yes
SRS Time 1	.06	No	-.13	No	.47	Yes
Gender	.43	Yes	.27	No	.28	No
Growth Sum Time 1	-.03	No	-.13	No	.03	No
Growth Sum Time 2	.05	No	.23	No	-.31	Yes

Chapter 4

Discussion

ASD is a condition with a wide prevalence rate (*DSM-5*, 2013) and a significant negative impact on quality of life for individuals with ASD and their caregivers (van Heijst & Geurts, 2015; McStay et al., 2013). One of the primary areas of deficit for people with ASD is social ability, and research has outlined related difficulties with loneliness (Lasgaard et al., 2010), depression (Hudson et al., 2018), and anxiety (van Steensel & Heeman, 2017). While several interventions have been developed to help increase social ability among participants with ASD, existing interventions suffer from limitations including a dearth of robust evidence for their effectiveness, high financial cost, and criticisms of negative effects on participants with ASD. In addition, while there are well-established interventions for anxiety in individuals with ASD (Ung et al., 2015), pilot studies on improving depression in individuals with ASD have been limited by sample sizes (McGillivray & Evert, 2014; Santomauro et al., 2016; Sizoo & Kuiper, 2017), and no research was found with interventions targeting loneliness in individuals with ASD. This study seeks to explore the impact of improv theater training for individuals with ASD on social functioning, loneliness, depression, and anxiety.

While anecdotal evidence supports the use of improv theater training for individuals with ASD, it has not yet been the focus of quantitative research. The current study partnered with an existing improv theater training program to gather pre- and post-data regarding twelve weeks of

weekly improv theater classes. It was hypothesized that improvements would be noted on social functioning, loneliness, depression, and anxiety for the participants involved.

Impact on Social Functioning

Unfortunately, poor completion rates of the social functioning measure prohibited pre-post comparisons on social functioning. It is possible that the 65 items involved (as compared to the other scales which involved three and four items) were too laborious for the participants to complete. Only three participants completed the social functioning measure in its entirety at both Time One and Time Two. Thus, this measure was used as an independent variable instead of as hypothesized as a dependent variable.

Impact on Loneliness

Correlational analysis indicated positive relationships between loneliness, social difficulty, mood and anxiety among individuals with ASD, describing that participants with increased social difficulty had increased loneliness as well as mood and anxiety symptoms. These findings are consistent with a previous study which determined that loneliness was associated with increased depression and anxiety among individuals with ASD (Mazurek 2014). In addition, correlational analysis indicated negative relationships between growth mindset and loneliness among individuals with ASD, describing that when participants had increased growth mindset, they were less lonely. This is consistent with prior research that neurotypical participants who had undergone a growth mindset intervention were able to recover more quickly from a social stressor (Schleider, & Weisz, 2016), and another study on the same intervention that led to improvements in depression and anxiety in a neurotypical sample (Schleider & Weisz, 2018).

Participants reported reduced experiences of feeling left out after completing a 12-week improv theater training program. This appears to be a novel finding in the field, though interventions have been found to improve loneliness in the general population. This is an important finding, however, because of the high rates of loneliness for young adults with ASD (Lasgaard et al., 2010), and the association of loneliness with anxiety and depression (Mazurek, 2014).

Contrary to hypotheses, however, participants reported an increased perception that they lacked companionship after the intervention, suggesting that improvisational theater leads individuals with ASD to feel a greater lack of companionship. These findings could be interpreted in several ways. Perhaps perceived lack of companionship increased related to increased social awareness and the social exposure involved in participation. Alternatively, increases in perceived lack of companionship may have been due to an increase in desired companionship, with the interventions leading participants to desire more companionship than they presently had. In either case, these findings are worthy of ongoing research.

Impact on Depression and Anxiety

No changes between Time One and Time Two were noted on the two depression items of the PHQ-4. However, there were some impacts noted on the anxiety items. Previous research has found that anxiety among individuals with ASD is responsive to intervention (Hillier et al., 2018; McVey et al., 2016), which is consistent with findings from the current study. The results of the current study indicate that improv theater results in decreased nervousness but does not affect participant experiences of worry. A previous study on traditional theater training for individuals with ASD found that it decreased trait anxiety among participants, although state anxiety was

unaffected (Corbett et al. 2017). These results may be synthesized by hypothesizing that all types of theater training help to reduce the affective experience of nervousness, but do not provide tools for managing the cognitive experiences of worry. This in turn may lead to participants endorsing reduced trait anxiety (as their baseline level of physiological arousal is lessened) but not endorsing any reduction in state anxiety (as experiences that provoked worry would still provoke the same level of worry.)

Participant Characteristics

To further explore predictors of change in this study, participant characteristics were analyzed to determine characteristics that predicted reliable change. Reliable change findings indicated that younger age, male gender, higher growth mindset and greater social impairment was associated with reliable change on feeling left out, lacking companionship, and nervousness. These results suggest that improv theater may be a particularly effective intervention for younger participants, male participants, participants with a strong growth mindset, and participants who have a lower level of social ability. No existing research on individuals with ASD could be found that analyzed participant characteristics that predicted responsiveness, so these reliable change data may be new research findings worthy of ongoing development in future studies.

Limitations

Measure completion rates. There are several limitations of this study which should be considered. First, one significant limitation is that the final data analysis focused on the secondary aim of the study, rather than the primary aim. The original primary aim of this study was to look at changes in the SRS-2 as a measure of social ability. However, SRS-2 completion rates were very poor as a result of many participants answering only some SRS-2 items rather

than the full measure. As a result, primary analysis was performed on other measures with better completion rates, and the SRS-2 was used for correlational and RCI analysis. With 65 items, the SRS-2 is a lengthy measure, and future studies may wish to consider using a shorter measure of social ability or use additional strategies to encourage participants to fully complete the SRS-2. An alternative option is to collect SRS-2 data from parents rather than students, as the SRS-2 offers both a self-report and observer-report version. The current study did seek to gather SRS-2 observer report data from parents of students, but only a small number ($n = 3$) of parents participated and therefore did not provide sufficient data for analysis (although all three parents did complete the full SRS-2.) Future research should plan to gather data primarily from parents or have strategies for ensuring that more student participants complete the full SRS-2. This will allow future studies to run time one versus time two analysis on the SRS-2 and determine if improv theater has an effect on social ability.

Sample size. Another significant limitation is that the sample size was small ($n = 21$), and the number of participants who completed both pretest and post test was even smaller ($n = 9$). Multiple factors combined to limit sample size. First, many parents did not respond to repeated attempts by the theater instructors to request their consent, and children without parental consent forms were not included in the data collection. Second, surveys were administered by theater staff rather than the researcher, which meant the researcher did not have the opportunity to verify that each student in a class had completed a survey each time. Finally, some parents declined to provide consent for their children to participate in a study that related to ASD, as they did not wish their children to be made aware of their diagnosis. Power analysis suggested that an N of 70 would be necessary to obtain sufficient power, and so it is suggested that future

researchers think carefully about the best way to overcome the challenges listed above to ensure a sufficient sample size.

Control group. Another limitation was the lack of the control group, making it more difficult to evaluate the specific effects of the theater intervention and account for confounding variables. Despite extensive outreach efforts, the current researcher encountered significant difficulty in recruitment for a control group of youth with ASD (particularly youth with ASD that were not already enrolled in a treatment of some kind). Future studies may wish to use a wait list control group in order to solve this issue.

Conclusion

In conclusion, the current study provided some evidence for the impact of improv theater training on feeling left out, lack of companionship, and nervousness, as well as intriguing correlations which could form the foundation for further research. However, caution should be taken when interpreting these results due to the limitations listed above, and additional research is suggested to validate the effectiveness of improv theater as a social cognition intervention for ASD.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.
- Arias, V., Gómez, B., Morán, L., Alcedo, E., Monsalve, M., & Fontanil, L. (2018). Does quality of life differ for children with Autism Spectrum Disorder and intellectual disability compared to peers without autism? *Journal of Autism and Developmental Disorders*, 48(1), 123-136.
- Bernaerts, Dillen, Steyaert, & Alaerts. (2017). The effects of four weeks of intranasal oxytocin on social responsiveness and repetitive and restricted behaviors in Autism Spectrum Disorders: A randomized controlled trial. *Biological Psychiatry*, 81(10), S349-S350.
- Bermant, G. (2013). Working with (out) a net: improvisational theater and enhanced well-being. *Frontiers in Psychology*, 4. doi:10.3389/fpsyg.2013.00929
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: a longitudinal study and an intervention. *Child Development*, 78, 246-263
- Bottema-Beutel, K., Park, H., & Kim, S.Y. (2018). Commentary on social skills training curricula for individuals with ASD: Social interaction, authenticity, and stigma. *Journal of Autism and Developmental Disorders*, 48(3), 953-964.
- Bruni, T. P. (2014). Test review: Social Responsiveness Scale-Second Edition (SRS-2). *Journal of Psychoeducational Assessment*, 32(4), 365-369. doi:10.1177/0734282913517525

- Buescher, A. V., Cidav, Z., Knapp, M., & Mandell, D. S. (2014). Costs of Autism Spectrum Disorders in the United Kingdom and the United States. *JAMA Pediatrics*, *168*(8), 721. doi:10.1001/jamapediatrics.2014.210
- Constantino, J. N., & Gruber C. P. (2012). *Social Responsiveness Scale, Second Edition (SRS-2)* [Manual]. Torrance, CA: Western Psychological Services.
- Corbett, B. A., Key, A. P., Qualls, L., Fecteau, S., Newsom, C., Coke, C., & Yoder, P. (2015). Improvement in social competence using a randomized trial of a theatre intervention for children with Autism Spectrum Disorder. *J Autism Dev Disord*, *46*(2), 658-672. doi:10.1007/s10803-015-2600-9
- Corbett, B. A., Blain, S. D., Ioannou, S., & Balser, M. (2017). Changes in anxiety following a randomized control trial of a theatre-based intervention for youth with Autism Spectrum Disorder. *Autism: The International Journal of Research and Practice*, *21*(3), 333-343.
- Cottenceau, H., Roux, S., Blanc, R., Lenoir, P., Bonnet-Brilhault, F., & Barthélémy, C. (2012). Quality of life of adolescents with Autism Spectrum Disorders: Comparison to adolescents with diabetes. *European Child & Adolescent Psychiatry*, *21*(5), 289-296. doi:10.1007/s00787-012-0263-z
- Dadds, M. R., MacDonald, E., Cauchi, A., Williams, K., Levy, F., & Brennan, J. (2014). Nasal oxytocin for social deficits in childhood autism: A randomized controlled trial. *J Autism Dev Disord*, *44*(3), 521-531. doi:10.1007/s10803-013-1899-3
- Devita-Raeburn, E. (2016, August 11). Is the most common therapy for autism cruel? Retrieved from <https://www.theatlantic.com/health/archive/2016/08/aba-autism-controversy/495272/>

- Didehbani, Allen, Kandalaf, Krawczyk, & Chapman. (2016). Virtual reality social cognition training for children with high functioning autism. *Computers in Human Behavior*, 62, 703-711.
- Erbentraut, J. (2015, May 1). Teens with autism stretch, grow and laugh in improv classes at Second City. Retrieved from http://www.huffingtonpost.com/2015/04/29/autism-improv-comedy_n_7162606.html
- Guastella, A. J., Einfeld, S. L., Gray, K. M., Rinehart, N. J., Tonge, B. J., Lambert, T. J., & Hickie, I. B. (2010). Intranasal oxytocin improves emotion recognition for youth with Autism Spectrum Disorders. *Biological Psychiatry*, 67(7), 692-694.
doi:10.1016/j.biopsych.2009.09.020
- Hillier, A., Goldstein, J., Murphy, D., Trietsch, R., Keeves, J., Mendes, E., & Queenan, A. (2018). Supporting university students with Autism Spectrum Disorder. *Autism: The International Journal of Research and Practice*, 22(1), 20-28.
- Hoefman, R., Payakachat, N., Van Exel, J., Kuhlthau, K., Kovacs, E., Pyne, J., & Tilford, J. M. (2014). Caring for a child with Autism Spectrum Disorder and parents' quality of life: Application of the CarerQol. *J Autism Dev Disord*. doi:10.1007/s10803-014-2066-1
- Hollander, E., Bartz, J., Chaplin, W., Phillips, A., Sumner, J., Soorya, L., ... Wasserman, S. (2007). Oxytocin increases retention of social cognition in autism. *Biological Psychiatry*, 61(4), 498-503. doi:10.1016/j.biopsych.2006.05.030
- Hudson, C., Hall, L., & Harkness, K. (2018). Prevalence of Depressive Disorders in individuals with Autism Spectrum Disorder: A meta-analysis. *Journal of Abnormal Child Psychology*, 01 March 2018.

- Hughes, M., Waite, L., Hawkey, L., & Cacioppo, J. (2004). A short scale for measuring loneliness in large surveys. *Research on Aging, 26*(6), 655-672
- Kamio, Y., Inada, N., & Koyama, T. (2012). A nationwide survey on quality of life and associated factors of adults with high-functioning Autism Spectrum Disorders. *Autism, 17*(1), 15-26. doi:10.1177/1362361312436848
- Kandalaft, M. R., Didehbandi, N., Krawczyk, D. C., Allen, T. T., & Chapman, S. B. (2012). Virtual reality social cognition training for young adults with high-functioning autism. *J Autism Dev Disord, 43*(1), 34-44. doi:10.1007/s10803-012-1544-6
- Ke, F., & Im, T. (2013). Virtual-reality-based social interaction training for children with high-functioning autism. *The Journal of Educational Research, 106*(6), 441-461. doi:10.1080/00220671.2013.832999
- Kroenke, Spitzer, Williams, & Löwe. (2009). An ultra-brief screening scale for anxiety and depression: The PHQ-4. *Psychosomatics, 50*(6), 613-621.
- Lahera, G., Benito, A., Montes, J., Fernández-Liria, A., Olbert, C., & Penn, D. (2013). Social cognition and interaction training (SCIT) for outpatients with bipolar disorder. *Journal of Affective Disorders, 146*(1), 132-136. doi:10.1016/j.jad.2012.06.032
- Lasgaard, M., Nielsen, A., Eriksen, M. E., & Goossens, L.. (2010). Loneliness and social support in adolescent boys with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders, 40*(2), 218-226.
- Laugeson, E. A., Frankel, F., Gantman, A., Dillon, A. R., & Mogil, C. (2011). Evidence-based social skills training for adolescents with Autism Spectrum Disorders: The UCLA

- PEERS program. *J Autism Dev Disord*, 42(6), 1025-1036. doi:10.1007/s10803-011-1339-1
- Laugeson, E. A., Gantman, A., Kapp, S. K., Orenski, K., & Ellingsen, R. (2015). A randomized controlled trial to improve social skills in young adults with Autism Spectrum Disorder: The UCLA PEERS® program. *J Autism Dev Disord*, 45(12), 3978-3989. doi:10.1007/s10803-015-2504-8
- Lewis, C., & Lovatt, P. J. (2013). Breaking away from set patterns of thinking: Improvisation and divergent thinking. *Thinking Skills and Creativity*, 9, 46-58. doi:10.1016/j.tsc.2013.03.001
- Lordo, D. N., Bertolin, M., Sudikoff, E. L., Keith, C., Braddock, B., & Kaufman, D. A. S. (2017). Parents perceive improvements in socio-emotional functioning in adolescents with ASD following social skills treatment. *Journal of Autism and Developmental Disorders*, 47(1), 203-214.
- Löwe, Wahl, Rose, Spitzer, Glaesmer, Wingenfeld, . . . Brähler. (2010). A 4-item measure of depression and anxiety: Validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population. *Journal of Affective Disorders*, 122(1), 86-95.
- Masi, C., Chen, H., Hawkey, L., & Cacioppo, J. (2011). A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc*, 15(3), 219-66.
- Mazurek, M. O. (2014). Loneliness, friendship, and well-being in adults with Autism Spectrum Disorders. *Autism: The International Journal of Research and Practice*, 18(3), 223-232.

McStay, R. L., Dissanayake, C., Scheeren, A., Koot, H. M., & Begeer, S. (2013). Parenting stress and autism: The role of age, autism severity, quality of life and problem behaviour of children and adolescents with autism. *Autism, 18*(5), 502-510.

doi:10.1177/1362361313485163

McGillivray, J. A., & Evert, H. T. (2014). Group cognitive behavioural therapy program shows potential in reducing symptoms of depression and stress among young people with autism. *Journal of Autism and Developmental Disorders, 44*(8), 2041-2051.

McVey, A. J., Dolan, B. K., Willar, K. S., Pleiss, S., Karst, J. S., Casnar, C. L., . . . Van Hecke, A. V. (2016). A replication and extension of the PEERS® for young adults social skills intervention: Examining effects on social skills and social anxiety in young adults with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders, 46*(12), 3739-3754.

O'Haire, M. E. (2012). Animal-assisted intervention for Autism Spectrum Disorder: A systematic literature review. *J Autism Dev Disord, 43*(7), 1606-1622.

doi:10.1007/s10803-012-1707-5

Parker, K., Oztan, O., Libove, R., Sumiyoshi, R., Jackson, L., Karhson, D., . . . Hardan, A. (2017). Intranasal oxytocin treatment for social deficits and biomarkers of response in children with autism. *Proceedings of the National Academy of Sciences of the United States of America, 114*(30), 8119-8124.

Reichow, B. (2011). Overview of meta-analyses on early intensive behavioral intervention for young children with Autism Spectrum Disorders. *J Autism Dev Disord, 42*(4), 512-520.

doi:10.1007/s10803-011-1218-9

- Reichow, B., Steiner, A., & Volkmar, F. (2012). Social skills groups for people aged 6 to 21 with autism spectrum disorders (ASD). *Cochrane Database of Systematic Reviews*, 2012(7), CD008511.
- Reichow, B., & Volkmar, F. R. (2009). Social skills interventions for individuals with autism: Evaluation for evidence-based practices within a best evidence synthesis framework. *J Autism Dev Disord*, 40(2), 149-166. doi:10.1007/s10803-009-0842-0
- Roberts, D. L., Combs, D. R., Willoughby, M., Mintz, J., Gibson, C., Rupp, B., & Penn, D. L. (2014). A randomized, controlled trial of Social Cognition and Interaction Training (SCIT) for outpatients with schizophrenia spectrum disorders. *British Journal of Clinical Psychology*, 53(3), 281-298. doi:10.1111/bjc.12044
- Santomauro, D., Sheffield, J., & Sofronoff, K. (2016). Depression in adolescents with autism: A pilot RCT of a group intervention. *Journal of Autism and Developmental Disorders*, 46(2), 572-588.
- Schleider, J., & Weisz, J. (2016). Reducing risk for anxiety and depression in adolescents: Effects of a single-session intervention teaching that personality can change. *Behaviour Research and Therapy*, 87, 170-181.
- Schleider, J., & Weisz, J. (2018). A single-session growth mindset intervention for adolescent anxiety and depression: 9-month outcomes of a randomized trial. *Journal of Child Psychology and Psychiatry*, 59(2), 160-170.
- Sizoo, & Kuiper. (2017). Cognitive behavioural therapy and mindfulness based stress reduction may be equally effective in reducing anxiety and depression in adults with Autism Spectrum Disorders. *Research in Developmental Disabilities*, 64, 47-55.

- Starr, E., Popovic, M., & McCall, S. (2016). Supporting children with Autism Spectrum Disorder at primary school: Are the promises of early intervention maintained? *Current Developmental Disorders Reports*, 3(1), 46-56.
- Stevens, J. (2011). Stand up for dementia: Performance, improvisation and stand up comedy as therapy for people with dementia; a qualitative study. *Dementia*, 11(1), 61-73.
doi:10.1177/1471301211418160
- Sukhodolsky, D., Bloch, M., Panza, K., & Reichow, B. (2013). Cognitive-behavioral therapy for anxiety in children with high-functioning autism: A meta-analysis. *Pediatrics*, 132(5), E1341-E1350.
- Sundberg, M. (2018). Online gaming, loneliness and friendships among adolescents and adults with autism. *Computers in Human Behavior*, 79, 105-110.
- Turner-Brown, L. M., Perry, T. D., Dichter, G. S., Bodfish, J. W., & Penn, D. L. (2008). Brief report: Feasibility of social cognition and interaction training for adults with high functioning autism. *J Autism Dev Disord*, 38(9), 1777-1784. doi:10.1007/s10803-008-0545-y
- Ung, D., Selles, R., Small, B., & Storch, J. (2015). A systematic review and meta-analysis of cognitive-behavioral therapy for anxiety in youth with high-functioning Autism Spectrum Disorders. *Child Psychiatry & Human Development*, 46(4), 533-547.
- Van Heijst, B. F., & Geurts, H. M. (2014). Quality of life in autism across the lifespan: A meta-analysis. *Autism*, 19(2), 158-167. doi:10.1177/1362361313517053
- Van Steensel, F., & Heeman, E. (2017). Anxiety levels in children with Autism Spectrum Disorder: A meta-analysis. *Journal of Child and Family Studies*, 26(7), 1753-1767.

Wolstencroft, J., Robinson, L., Srinivasan, R., Kerry, E., Mandy, W., & Skuse, D. (2018). A systematic review of group social skills interventions, and meta-analysis of outcomes, for children with high functioning ASD. *Journal of Autism and Developmental Disorders*, 08 February 2018.

Appendix A

Informed Consent

Improv Theater as a Social Cognition Intervention for ASD

I authorize Daniel Wendler, MA, and his supervisor Celeste Jones, PsyD, of the Graduate Department of Clinical Psychology at George Fox University, Newberg, Oregon, and their designated research assistants to gather information from me on the topic of the effects of improv theater training on social satisfaction and social ability.

I understand that the general purposes of the research are to explore the effects of improv theater training on the social satisfaction and social ability of individuals with ASD. I understand that I will complete a questionnaire before and after this training.

I understand that my permission is voluntary, and that I can discontinue at any time without penalty or loss of benefits to which I am otherwise entitled.

I understand that if I have questions about the research Celeste Jones, PsyD will be available for consultation.

All the data gathered from my questionnaires will be kept confidential. Confidentiality of research results will be maintained by the researcher.

The potential benefits/risks of the research study are an improved understanding of the potential benefits of improv theater training for individuals with ASD.

Signature of Participant

Date

Please sign one and return it to the researcher.

Questions and comments may be addressed to Celeste Jones, PsyD. Graduate Department of Clinical Psychology, George Fox University, 414 N Meridian St. Newberg, OR, cjones@georgefox.edu

Appendix B**Demographic Questionnaire**

Please read the following items and answer as completely as possible.

1. What is your gender? Male Female Other _____

2. What is your age: _____

3. What best describes your ethnicity? _____

4. What is the source of your ASD/Asperger's diagnosis?

School Counselor Medical Doctor Therapist/Psychologist Self-Diagnosis
Don't Remember Don't Have ASD Other_____

5. At what age were you diagnosed with ASD? _____

6. Have you participated in improv theater classes before? YES NO

7. If yes, how many classes did you take? _____

Appendix C**PHQ-4 Assessment**

Over the past 2 weeks, how often have you been bothered by the following problems?

- | | | | |
|--|--------------|-------------------------|------------------|
| 1) Feeling nervous, anxious, or on edge | | | |
| Not at all | Several days | More than half the days | Nearly every day |
| 2) Not being able to stop or control worrying | | | |
| Not at all | Several days | More than half the days | Nearly every day |
| 1) Little pleasure or interest in doing things | | | |
| Not at all | Several days | More than half the days | Nearly every day |
| 1) Feeling down, depressed, or hopeless | | | |
| Not at all | Several days | More than half the days | Nearly every day |

Appendix D**Modified Growth Mindset Assessment**

Read each sentence below and mark the choice that shows how much you agree with it. There are no right or wrong answers.

1) You can learn new things, but you can't really change your basic social ability
Strongly Disagree Disagree Somewhat Disagree Somewhat Agree Agree

Strongly Agree

2) Your social ability is something about you that you can't change very much.
Strongly Disagree Disagree Somewhat Disagree Somewhat Agree Agree

Strongly Agree

3) You have a certain level of social ability and you really can't do much to change it.
Strongly Disagree Disagree Somewhat Disagree Somewhat Agree Agree

Strongly Agree

Appendix E**Social Responsiveness Scale – 2**

For each question, please select the response that best describes your behavior over the past six months. 1 = Not true 2 = Sometimes true 3 = Often true 4 = Almost always true

- 1) I am much more uncomfortable in social situations than when I am by myself
- 2) My facial expressions send the wrong message to others about how I actually feel
- 3) I feel self-confident when interacting with others
- 4) When under stress, I engaged in rigid or inflexible patterns of behavior that seem odd to people
- 5) I do not recognize when others are trying to take advantage of me
- 6) I would rather be alone than with others
- 7) I am usually aware of how others are feeling
- 8) I behave in ways that seem strange or bizarre to others
- 9) I am overly dependent on others for help with meeting my everyday needs
- 10) I take things too literally and because of that, I misinterpret the intended meaning of parts of a conversation
- 11) I have good self-confidence
- 12) I am able to communicate my feelings to others
- 13) I am awkward in turn-taking interactions with others (for example, I have a hard time keeping up with the give-and-take of a conversation)
- 14) I am not well coordinated
- 15) When people change their tone or facial expression, I usually pick up on that and understand what I mean
- 16) I avoid eye contact or am told that I have unusual eye contact
- 17) I recognize when something is unfair
- 18) I have difficulty making friends, even when trying my best
- 19) I get frustrated trying to get ideas across in conversations
- 20) I have sensory interests that others find unusual (for example, smelling or looking at things in a special way)
- 21) I am able to imitate others' actions and expressions when it is socially appropriate to do so
- 22) I interact appropriately with other adults

- 23) I do not join group activities or social events unless prompted or strongly urged to do so
- 24) I have more difficulty than others with changes in my routine
- 25) I do not mind being out of step with or not on the same wavelength as others
- 26) I offer comfort to others when they are sad
- 27) I avoid starting social interactions with other adults
- 28) I think or talk about the same thing over and over
- 29) I am regarded by others as odd or weird
- 30) I become upset in situations with lots of things going on
- 31) I can't get my mind off something once I start thinking about it
- 32) I have good personal hygiene.
- 33) My behavior is socially awkward, even when I am trying to be polite
- 34) I avoid people who want to be emotionally close to me
- 35) I have trouble keeping up with the flow of a normal conversation
- 36) I have difficulty relating to family members
- 37) I have difficulty relating to adults outside of my family
- 38) I respond appropriately to mood changes in others (for example, when a friend's mood changes from happy to sad)
- 39) People think I am interested in too few topics, or that I get too carried away with those topics
- 40) I am imaginative
- 41) I sometimes seem to wander aimlessly from one activity to another
- 42) I am overly sensitive to certain sounds, textures, or smells
- 43) I enjoy small talk (casual conversation with others)
- 44) I have more trouble than most people with understanding chains of causation (in other words, how events are related to one another)
- 45) When others around me are paying attention to something, I get interested in what they are attending to
- 46) Others feel that I have overly serious facial expressions
- 47) I laugh at inappropriate times
- 48) I have a good sense of humor and can understand jokes
- 49) I do extremely well at certain kinds of intellectual tasks, but do not do as well at most other tasks
- 50) I have repetitive behaviors that others consider odd
- 51) I have difficulty answering questions directly and end up talking around the subject
- 52) I get overly loud without realizing it
- 53) I tend to talk in a monotone voice (in other words, less inflection of voice than most people demonstrate)
- 54) I tend to think about people in the same way that I do objects
- 55) I get too close to others or invade their personal space without realizing it

- 56)I sometimes make the mistake of walking between two people who are trying to talk to one another.
- 57)I tend to isolate myself
- 58)I concentrate too much on parts of things rather than seeing the whole picture
- 59)I am more suspicious than most people
- 60)Other people think I am emotionally distant and do not show my feelings
- 61)I tend to be inflexible
- 62)When I tell someone my reason for doing something, it strikes the person as unusual or illogical
- 63)My way of greeting another person is unusual
- 64)I am much more tense in social settings than when I am by myself
- 65)I find myself staring or gazing off into space.

Appendix F

UCLA-3 Loneliness Scale

Indicate how often you feel the way described in the following statements

1) How often do you lack companionship?

Hardly Ever Some of the Time Often

2) How often do you feel left out?

Hardly Ever Some of the Time Often

3) How often do you feel isolated from others?

Hardly Ever Some of the Time Often

Appendix G**Curriculum Vitae****DANIEL H WENDLER**712 E 5th St Newberg, OR

dwendler14@georgefox.edu

760-331-9147

DanielWendler.com

EDUCATION

(05/2016-05/2019) **DOCTORATE OF CLINICAL PSYCHOLOGY**
George Fox University, Newberg, OR

Advisor: Celeste Jones, Psy.D., ABPP

Dissertation: Improv theater as a social cognition intervention for
ASD

08/2014-05/2016 **MASTERS OF CLINICAL PSYCHOLOGY**
George Fox University, Newberg, OR

08/2006-05/2010 **BACHELORS OF ARTS IN ECONOMICS AND BUSINESS**
BACHELORS OF ARTS IN SPANISH
Westmont College, Santa Barbara, CA

CURRENT CLINICAL EXPERIENCE

08/2017-Present **Practicum Therapist**
George Fox Health and Counseling Center, Newberg, OR

Duties include therapy services and risk assessment with clients in a university counseling setting. Referral concerns have included developmental concerns, anxiety, grief, depression, trauma, social isolation, and suicidality.

06/2016 - Present **Behavioral Health Crisis Consultation Team Member**

George Fox University, Newberg, OR

Duties include on-call crisis assessment of patients in hospital emergency departments to determine if the patient meets criteria to be placed under involuntary psychiatric hold, as well as consultation with emergency department physicians to share assessment results. Phone supervision and ongoing training provided by licensed clinical psychologists on faculty at George Fox University.

Clients range from child to adult and present with concerns including suicidality, violence, inability to care for self, substance abuse, active psychosis, and other severe mental health concerns.

PREVIOUS CLINICAL EXPERIENCE

08/2016-06/2017

Therapy and Assessment Supplemental Practicum Student

George Fox Behavioral Health Clinic, Newberg, OR

Returned to Behavioral Health Clinic on half-time basis for a second year. Duties included provision of therapy and assessment services to clients in a community mental health setting. Clients have ranged in age from child to adults. Referral concerns have included anger management, adjustment, parenting, depression, anxiety, trauma, and social difficulty.

08/2016 – 06/2017

Therapy and Assessment Practicum Student

Northwest ADHD Treatment Center, Tualatin, OR

Duties included provision of cognitive-behavioral therapy and assessment services to adult clients in a private practice setting, as well as consultation with on-site psychiatric nurse practitioners to coordinate patient care. Referral concerns were primarily related to ADHD assessment and treatment, but also include depression, anxiety, chronic pain, substance abuse, and trauma.

08/2015-06/2016

Therapy and Assessment Practicum Student

George Fox Behavioral Health Clinic, Newberg, OR

Duties included provision of therapy and assessment services to clients in a community mental health setting. Clients have ranged in age from adolescents to adults. Referral concerns have included anger management, parenting, depression, anxiety, trauma, and social difficulty.

2013-2014

Group and Individual Social Skills Coach

Marbridge Foundation, Manchaca, TX

Offered 1-2 hour group and individual social skills instruction to clients with developmental disabilities in a residential setting. Group sessions lasted ten weeks, with one session per week.

OTHER PROFESSIONAL EXPERIENCE

Spring 2015 - Present **Founder of Marketing for Therapists**

MarketingForTherapists.org

Authored and published an online marketing guide designed for private practice therapists. Also provide freelance online marketing consulting to therapists.

2012-Present

Founder of Improve Your Social Skills

ImproveYourSocialSkills.com

Authored and published a comprehensive online social skills guide that has received more than 2,000,000 visitors. The website is focused on building conversational and relationship skills in platonic relationships. Audience includes readers with ASD and social anxiety, as well as general audience readers.

2013 – October 2015 **Senior Paid Media Strategist**

Apogee Results, Austin, TX

Managed online marketing and search engine advertising for a portfolio of clients across the US. Monthly expenditures on advertising averaged \$100,000. Also supervised and trained junior members of the team. In Fall 2014, role transitioned to part-time.

2011 – 2013

Account Manager

Adlucent, Austin, TX

Managed online marketing and search engine advertising for a major online retailer. Managed \$100,000 in monthly digital advertising. Responsible for \$8 million in annual revenue.

PUBLICATIONS

Wendler, D. (2016). *Clicking with clients: Online marketing for private practice therapists*. Amazon Kindle Direct Publishing. Available from <http://www.amazon.com/Clicking-Clients-Marketing-Practice-Therapists/dp/1532844557>

Wendler, D. (2016). *Level up your social life: The gamer's guide to social success*. Amazon Kindle Direct Publishing. Available from <http://www.amazon.com/Level-Up-Your-Social-Life/dp/1523975253>

Wendler, D. (2014) *Improve your social skills*. Amazon Kindle Direct Publishing. Available from <http://www.amazon.com/dp/B00IDEKYBK>

ONLINE PUBLICATIONS

- Wendler, D. (2017). *How to stop speedrunning your relationships*. Available from <http://geekandsundry.com/how-to-stop-speedrunning-your-relationships/>
- Wendler, D. (2017). *Infinite lives: Learning how to survive social situations*. Available from <http://geekandsundry.com/infinite-lives-learning-how-to-survive-social-situations/>
- Wendler, D. (2017). *Random encounters: Level up your social skills*. Available from <http://www.takethis.org/expert-advice/random-encounters-level-up-your-social-skills/>
- Wendler, D. (2016). *How therapists can write for the web...without boring their readers*. Available from <http://blog.time2track.com/how-therapists-can-write-for-the-web-without-boring-their-readers>
- Wendler, D. (2016). *Online advertising guide for therapists* Available from <https://www.brightervision.com/online-advertising-for-therapists/>
- Wendler, D. (2015). *How to make a great therapist LinkedIn profile in 3 easy steps* Available from <http://blog.time2track.com/how-to-make-a-great-therapist-linkedin-profile-in-3-easy-steps>
- Wendler, D. (2015). *Why every therapist needs a website (and how to get one)* Available from <http://blog.time2track.com/why-every-therapist-needs-a-website-and-how-to-get-one>
- Wendler, D. (2015). *Five ingredients every therapist website must have*. Available from <https://www.brightervision.com/therapist-website-design-tips/>
- Wendler, D. (2015). *Four easy ways to improve your therapist website*. Available from <https://pro.psychcentral.com/four-easy-ways-to-improve-your-therapist-website/008242.html>
- Wendler, D. (2015). *Social media dos and don'ts for professionals*. Available from <https://pro.psychcentral.com/social-media-dos-and-donts-for-professionals/007882.html>

RESEARCH

- Summers, W., **Wendler, D.**, & Neary T. A meta-analysis of ADHD and increased risk for suicide. *Presented at the 2017 American Professional Society of ADHD and Related Disorders Annual Meeting.*
- Shumway, K. T., **Wendler, D.**, Robison, M.. Sleep, Stress, Social Connectedness, and Cohort Satisfaction in Graduate School. *Presented to the George Fox University GDCP Student Council and Faculty Board for APA Self-Study 2017.*
- Shumway, K. T., Foster, L., & **Wendler D.** Suicidality, Psychopathology, and Emergency Department Use for Crisis in Rural Communities. *Submitted to Western Psychological Association Convention 2017.*
-

Haigh, J., Dean, C., **Wendler, D.**, & Flachsbart, C. Characteristics of vocational environments that support young adults with ASD. *Presented at Western Psychological Association Convention 2016, Long Beach, CA.*

PRESENTATIONS

2017 "You Belong for Teens" - Invited Conference Speaker
Love & ASD Conference
San Diego, CA

Co-led a two-day experiential workshop that provided teens on the autistic spectrum with the opportunity to experience belonging, engage in process groups, and learn practical skills for social interaction and friendship formation.

2017 "Understanding ASD: Diagnosis, Treatment and Beyond" – Guest Lecturer
George Fox University's School of Social Work Masters Program
Newberg, Oregon

Provided two one-hour guest lectures on ASD to the "Introduction to the DSM-V" class for MSW students.

2017 "Social Skills Interventions & Basic Trauma Intervention Skills" – Practicum Presenter
George Fox University Health And Counseling Center
Newberg, Oregon

Provided two one-hour trainings to junior practicum students on helping clients reach their social goals and on treating trauma.

2017 "Effective Use of The Collaborative Assessment and Management of Suicidality Framework" –Invited Presenter
George Fox University Behavioral Health Crisis Consultation Team
Newberg, Oregon

Provided training to crisis consultation team members on use the CAMS framework and the CAMS Suicide Status Form 4 for risk assessment and ongoing treatment of suicidality.

2017 "The Science of Satisfying Relationships" - Invited Conference Speaker
Sanctuary Churches Conference
Orange, CA

Provided a 60-minute talk on research-based strategies for relationship improvement, drawing on attachment research and Dr. John Gottman's theories.

2017 Variety of Talks and Workshops - Invited Conference Speaker
Matthew Reardon Center for ASD Conference
Savannah, GA

Taught a 90-minute workshop on social skills development for individuals with ASD, a 90-minute workshop on healthy dating strategies for young adults on the autistic spectrum, a 3-hour experiential workshop on how improv theater could help with social skills development, and delivered a 1-hour speech on "ASD and the Power of Friendship."

- 2016 "Platonic Love: ASD and the power of friendship" - Invited Conference Speaker
Love & ASD Conference
San Diego, CA

Provided an inspirational speech on how my friends helped me change from a young boy who believed that he was bad to a young man who believed that he was loved, and encouraged listeners to unlock the power of friendship in their own lives.

- 2016 "Motivating Social Success for Autistic Residents"- Invited Speaker
Marbridge Foundation
Manchaca, TX

Provided a one-hour staff training at an assisted living facility for residents with developmental disabilities.

- 2016 "Marketing Your Practice: A Guide to Helping Clients Find You Online"- Invited Webinar Speaker
Therasoft Webinar
Online

Provided a one-hour live training webinar on online marketing strategies for private practice therapists.

- 2016 "Sanctuary Churches"- Invited Conference Speaker
Sanctuary Church Conference
Orange, CA

Co-led a three- hour workshop for church leaders on strategies to help their churches be more welcoming and supportive to congregants, especially those with mental health issues.

- 2016 "Small Talk Fundamentals"- Invited Webinar Speaker
Interpublic Group Small Talk Webinar
Online

Provided a one-hour live training webinar on small talk strategies for advertising executives.

- 2016 "Social Skills & Strategies for Teens and Young Adults"- Invited Conference Speaker
Matthew Reardon Center for ASD Conference
Savannah, GA

Provided a three-hour workshop on social skills development for young adults with ASD. Audience included educators, mental health professionals, parents, and individuals with ASD. Also participated in a panel on successful life after high school for individuals with ASD.

- 2015 “How to Launch a Therapist Website”
Professional Development Student Interest Group
 Graduate Department of Clinical Psychology, George Fox University
 Newberg, OR

Discussed how to establish an online professional presence as a student psychologist or early career psychologist. Audience included graduate students in clinical psychology.

- 2015 “Evidence-Based Therapy for BDSM/Kink Sexualities”
Gender & Sexuality Student Interest Group
 Graduate Department of Clinical Psychology, George Fox University
 Newberg, OR

Provided training on delivering evidence-based interventions to clients with a BDSM/Kink sexuality. Topics included differentiation between BDSM and abuse, current research on BDSM, issues of stigma and prejudice, and challenges BDSM clients face with accessing competent mental health care.

- 2014 “Sharing Your True Abilities”- Invited Keynote Speaker
Providence Place Center for Higher Independence
 San Antonio, TX

Delivered the graduation speech for a class of young adults with disabilities. Transcript available at DanielWendler.com/writing/providence-place-graduation-speech/

- 2013 “My Life with Asperger’s” TEDx Talk Invited Keynote Speaker
TEDxUniversityofArizona
 Tucson, AZ

Spoke on Asperger’s, friendship, and community. Viewed online over 330,000 times. Available at [YouTube.com/watch?v=B-xgdqNtcDI](https://www.youtube.com/watch?v=B-xgdqNtcDI)

GRAND ROUNDS & COLLOQUIA

Gil-Kasiwabara, E. (2017, Oct). *Using community based participatory research to promote mental health in American Indian/Alaska Native children, youth and families.*

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Grand Rounds, Newberg, OR.

Seegobin, W., Peterson, M., McMinn, M. & Andrews, G. (2017, March) *Difficult Dialogues*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Diversity Grand Rounds, Newberg, OR.

Warford, P. & Baltzell, T. (2017, March) *Domestic violence: A coordinated community response*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Colloquium, Newberg, OR.

Brown, S (2017, Feb). *Native self-actualization: It's assessment and application in therapy*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Grand Rounds, Newberg, OR.

Bourg, W. (2016, Nov). *When divorce hits the family: Helping parents and children navigate*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Grand Rounds, Newberg, OR.

Kuhnhausen, B. (2016, Oct). *Sacredness, naming, and healing: Lanterns along the way*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Colloquium, Newberg, OR.

Jenkins, S. (2016, Mar.). *Managing with diverse clients*. Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Colloquium, Newberg, OR.

Hall, T. & Janzen, D. (2016, Feb.). *Neuropsychology: What do we know 15 years after the decade of the brain? & Okay, enough small talk. Let's get down to business!*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Grand Rounds, Newberg, OR.

Mauldin, J., (2015, Oct.). *Let's Talk about Sex: sex and sexuality with clinical applications*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Grand Rounds, Newberg, OR.

Hoffman, M., (2015, Sep.). *Relational Psychoanalysis and Christian Faith: A Heuristic dialogue*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Colloquium, Newberg, OR.

McRay, B., (2015, Mar.). *Spiritual Formation and Psychotherapy*. Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Colloquium, Newberg, OR.

Sammons, M., (2015, Feb.). *Credentialing, Banking, the Internship Crisis, and other Challenges for Graduate Students in Psychology*. Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Grand Rounds, Newberg OR.

Dodgen-Magee, D. (2014, Nov.) *"Facetime" in an Age of Technological Attachment*.

Presentation presented at George Fox University, Graduate Department of Clinical Psychology Spring Colloquium, Newberg, OR.

Doty, E., & Becker, T. (2014, Oct.) *Understanding and treating ADHD and Learning Disabilities in the DSM 5*. Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Grand Rounds, Newberg, OR.

MEMBERSHIP

Member At Large, Student Council

George Fox University, Fall 2017 – Present

Student Interest Group Coordinator, Student Council

George Fox University, Fall 2017 – Present

Co-founder, Professional Development Student Interest Group

George Fox University, Spring 2015 – Present

Member, Psi Chi International Honor Society in Psychology

George Fox University, Spring 2015 – Present

Member, Gender and Sexuality Student Interest Group

George Fox University, Fall 2014 – Present

Graduate Student Affiliate Member

American Psychological Association, Fall 2014 – Present