Drama therapy as an intervention for autism spectrum disorder: The potential benefits for youth and adulthood

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DRAMA THERAPY AS AN INTERVENTION FOR AUTISM SPECTRUM DISORDER:
THE POTENTIAL BENEFITS FOR YOUTH AND ADULTHOOD

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Abstract

There are many interventions commonly used for individuals with autism spectrum disorder (ASD). However, one that has not been researched as often is drama therapy. Though there are not many studies on drama therapy and ASD, the ones that do exist seem to indicate positive results. The goal of this proposed study is to assess whether drama therapy could be a good intervention for ASD and if it could potentially be a better option compared to applied behavioral analysis (ABA). The proposed study is broken into two smaller studies. The first study explores the potential benefits of drama therapy for social and communication skill development for autistic youth. The study design will assess the social and communication skills at the beginning and end of a 3-month drama therapy course. It is hypothesized that there will be an increase in social and communication skills following the 3 months. The second study then investigates whether drama therapy in childhood could lower the risk of post-traumatic stress responses in autistic adults as compared to autistic adults who received ABA in childhood. In this design, participants will be asked to complete two scales assessing the number of traumas they have experienced and post-traumatic stress levels. It is hypothesized that participants exposed to drama therapy will have lower post-traumatic stress levels than those exposed to ABA. These two studies together could help to expand the options for interventions available to autistic people and potentially find drama therapy to be a better alternative than the current options.
Acknowledgments

I would like to thank everyone who has helped me get to this point. College has been an amazing but difficult experience, and this thesis is a culmination of all of that work. To my parents, thank you for always supporting me no matter what and knowing that I am capable even when I cannot see it. To my sister, thank you for knowing how to make me smile even when I was stressed beyond words. To my extended family, thank you for listening to me talk about my thesis and supporting me through every step of life. Lastly, I would like to thank my cousin Jamie who was and will forever be an inspiration to me in every piece of writing I create. His memory will live on through the inspiration he left behind.
Drama therapy as an intervention for autism spectrum disorder: The potential benefits for youth and adulthood

Autism spectrum disorder (ASD) is highly misunderstood. From its origins to its codification, many things have been debated. For many years, it was argued that autism was solely discovered by Hans Asperger and Leo Kanner, that it was 4 times more likely in males than in females, and even that autism was caused by vaccinating children (Davidson, 2017; McCrossin, 2022; Posar & Visconti, 2017). All of these hypotheses have been disproven. With time comes new understanding, and that is exactly the goal of this study. Additionally, some of the more common interventions for ASD, like applied behavioral analysis and cognitive behavioral therapy have been immensely researched and debated for several years in terms of whether they are helpful, if they could potentially lead to trauma, and many other concerns (ABA Centers of America, n.d.; Wang et al., 2021). However, some interventions are not as thoroughly researched, yet could potentially prove to be more beneficial in treating autism. One such intervention is drama therapy. The purpose of this study is to explore the benefits of drama therapy as an intervention for autism spectrum disorder and the possibility that it might be a better option as compared to applied behavioral analysis.

Autism Spectrum Disorder

Autism spectrum disorder is defined as a neurological disorder that affects social skills, communication, language abilities, and the intake and expression of information, emotions, and sensory input (National Institute of Mental Health, 2023). The terminology and codification of ASD has changed many times since it was discovered. For example, in the first Diagnostic and Statistical Manual (DSM-I; American Psychiatric Association, 1952) autism was classified as a childhood type schizophrenic reaction. More recently, the DSM-IV (American Psychiatric
Association, 1994) had ASD broken into different sub-classifications including Asperger’s disorder, Rett’s disorder, autistic disorder, and childhood disintegrative disorder (Oberman & Kaufmann, 2020). The current edition of the Diagnostic and Statistical Manual is the DSM-V (American Psychiatric Association, 2013) and in this version, all of the pervasive developmental disorders were merged into what is now called autism spectrum disorder.

Due to the terminology around ASD changing so substantially, the diagnostic criteria have also been divided, merged, and adjusted in many ways. One example of a change from the DSM-IV to the DSM-V is the point that while autism symptoms must exist in childhood, they might not become fully present until later in life (American Psychiatric Association, 1994, 2013). This was an important addition for diagnosing autism as many people were going undiagnosed due to symptoms only fully appearing later in life. In fact, in 2012 the ratio of autistic children to non-autistic children was thought to be 1:69, today after the release of the DSM-V the numbers have changed to about 1:36 (Centers for Disease Control and Prevention, 2023).

One important aspect of ASD is that because it is a spectrum disorder, it presents differently in every autistic individual. After the publication of the DSM-V, more information was discovered on how autism especially presents differently between males and females (Werling & Geschwind, 2014). Werling & Geschwind (2014) suggest that females tend to experience their autism more internally than externally. They go on to explain that autistic females show more anxiety and depression behaviors than autistic males. They argue that men tend to show the more externalized behaviors such as lowered prosocial behavior and repetitive behaviors.

Another way autism can vary between individuals is in support needs. According to the text-revised version of the fifth edition DSM (DSM-5-TR; American Psychiatric Association,
2022), individuals with autism spectrum disorder can fall into one of three levels of support needs. Support need labels took the place of functioning labels from previous editions of the DSM. These new labels include requiring very substantial support (level 3), requiring substantial support (level 2), and requiring support (level 1). Often those who fall within level three have severe deficits in language and communication and can sometimes be completely nonverbal.

**Applied Behavioral Analysis**

There are several therapies frequently used as treatment for those with autism spectrum disorder. One of the most common is applied behavioral analysis or ABA. This intervention is a type of treatment that employs operant conditioning techniques to target and reinforce specific behaviors in patients and stop the ones seen as undesirable (Sandoval-Norton et al. 2019). ABA involves the identification of target behaviors, often in collaboration with parents or caretakers, followed by reinforcement or consequence strategies to modify and shape behavior in individuals with autism until the behavior is considered eliminated (Rudy, 2023). When ABA was first created, the consequences involved electric shocks. Today, it is more common for consequences to include withholding a favorite food or toy.

One of the many reasons that this intervention is so controversial is that there is evidence that ABA can be traumatic for autistic patients and could potentially lead to PTSD later in life. It is believed that PTSD occurs because the behaviors ABA is trying to stop are normal for autistic individuals and when one suppresses them, masking occurs (Ross et al., 2022; Shkedy et al., 2021). Masking is defined as a behavior in which a person with ASD intentionally or unintentionally imitates the behaviors and mannerisms of the people around them and suppresses their autistic traits in order to fit in and avoid potential rejection (Tierney et al., 2016; van der Putten et al., 2022). Masking has been associated with missed or late diagnoses which can cause
problems in getting the resources or accommodations needed and it can also lead to mental health struggles (van der Putten et al., 2022).

Many autistic people, especially those who were assigned female at birth (AFAB), feel like they must pretend to be neurotypical for society to accept them. However, this behavior has also been attributed to a loss of identity and feelings of not knowing who they are beneath the mask (Bargeila et al., 2016). Han et al. (2021) further suggest that continuous masking and loss of identity can lead to lower self-esteem and related mental health concerns. Additionally, there is evidence that masking autism can lead to lifelong suicidal thoughts and behaviors, and feeling like one is a prisoner in one’s own head (Cassidy et al., 2023). Many researchers argue that encouraging camouflaging behaviors can be detrimental to the well-being of autistic people. Instead, encouraging them to be their true selves will help them to further accept their autistic traits (Bargeila et al., 2016; Cassidy et al., 2023; Han et al., 2021; Tierney et al., 2016; van der Putten et al. 2022). The definition of ABA is using positive and negative reinforcement to condition autistic individuals into utilizing a desired behavior (Rudy, 2023). Due to the behaviors in question being normal for autistic people, in order to achieve them one must suppress the normal behavior. This means that the definition of ABA is directly linked to encouraging masking behaviors which could explain why there is evidence suggesting exposure to ABA is connected to PTSD (Anderson, 2022; Kupferstein, 2017; Radulksi, 2022).

Harmful effects of ABA can show up fairly quickly in patients. Kupferstein (2017) argues that even after only four weeks of exposure to ABA, many autistic individuals will meet the criteria for PTSD. Kupferstein also suggests that the benefits seen from ABA are generally reported by the caretakers and not the autistic individuals themselves. When people with ASD are asked about their experience with ABA, the response tends to be more negative (Kupferstein,
Autistic self-advocates have stressed that ABA fundamentally changes the way an autistic person presents themselves and forces compliance even when the behaviors are not necessarily damaging (Anderson, 2022). The same self-advocates described how ABA seemed temporarily helpful in terms of certain skills they learned but that they quickly started falling behind in school and experiencing the post-traumatic stress. They emphasized that ABA was not worth the harm caused to their mental health and sense of self. Additionally, autistic people are generally more likely to have trauma or PTSD at some point in their lives compared to the clinically recorded PTSD rates of typically developing people (Rumball et al., 2020). It is important to prevent trauma and PTSD whenever possible and with ABA being one of the most common interventions for autistic people, it has a higher likelihood of coming to fruition.

Operant conditioning encourages masking behaviors in autistic people and many researchers have argued that that is harmful to mental health as discussed earlier. Cassidy et al. (2023) found that there is a significant connection between masking autistic traits and feelings of discouragement and low self-esteem which can then be associated with a lifetime of suicidal thoughts. Because ABA encourages masking behaviors (Rudy, 2023), there could be a significant connection between ABA and these feelings of discouragement and lifelong suicidal thoughts.

Radulksi (2022) argues that stimming, a natural sensory behavior in many autistic people, which can include things like flapping one's hands, clicking a pen, using fidget or sensory toys, and many others, is necessary for sustaining mental health in people with ASD. However, the ABA Centers of America website discusses how stimming is not socially acceptable and children with autism need to be taught how to change their stimming. This viewpoint directly encourages masking behaviors to make stimming more palatable for neurotypical people. Radulksi (2022)
also discusses how in general autistic people are afraid to stim because of the rhetoric that neurotypical people will think it is inappropriate. This idea that autistic people can control how they present themselves and can act “less autistic” was originally put forth by ABA and organizations like Autism Speaks. Such ideas of control and limitations on autistic traits encourage masking and consequently lead to autistic individuals facing potential mental health issues. Masking can start at any age and can still lead to mental health issues no matter when it onsets, however, a number of researchers suggest that masking typically begins around middle childhood to adolescence (Han et al., 2021; Radulksi, 2022; Ross et al., 2022).

Sandoval-Norton et al. (2019) refer to ABA as abuse and say that it encourages compliance, helplessness, anxiety, masking, and lowered self-esteem, among other things. The main reasons for that study’s argument are that ABA teaches compliance not skills and that the operant conditioning aspect leads to discouragement of behaviors that, for an autistic person, are normal and needed. Essentially, this study suggests that the trauma seen from ABA stems from the encouragement of compliance and masking due to operant conditioning. One thing that this study mentions is the need for self-stimulatory behavior in autistic individuals and how ABA often discourages those behaviors. This idea relates to the argument made by Radulksi (2022) that self-stimulatory behavior is necessary for maintaining mental health. Meaning, ABA discouraging that behavior could be what is contributing to the reports of trauma associated with the intervention. There are many better options and researchers have a lot more to explore with other forms of therapy and interventions, but one worthy example is drama therapy.

**Drama Therapy**

Drama therapy is a theatre-based intervention utilizing licensed therapists in which patients use both fiction and reality to work through the therapeutic goals they establish with
Drama therapy is extremely customizable, but some examples of activities include puppetry, improvisation, and creative script writing (Sherrell, 2022). The same study explains how individuals will use these activities along with others to process difficult emotions and develop the capacity for creative expression. Drama therapy has been used to treat many things including anxiety, depression, addiction, and trauma (NADTA, n.d.; Orkibi et al., 2023; Sherrell, 2022).

Additionally, having creative outlets has been associated with a stronger sense of identity and self-expression in adolescents as well as increased self-esteem (Barbot & Heuser, 2017). As self-esteem and identity are two things that have been negatively associated with masking autism, and engaging in masking behaviors all the time can be traumatic for Autistic individuals (Bargeila et al., 2016; Han et al., 2021, Tierney et al., 2016). This is a reason why creative outlets in interventions like drama therapy should be good alternatives to ABA.

Additionally, preliminary research has found an association between drama therapy and positive changes in social and communication skills in autistic children (Beadle-Brown et al., 2018). In the same study, they found many of the patients and caregivers had a positive response to drama therapy and most patients showed little to no anxiety in the space. Furthermore, Kehl (2021) found that drama therapy is associated with autistic students having increased verbal and nonverbal communication skills. The same study also suggested that drama therapy and other theatre-based interventions are an underutilized way of increasing social skills in autistic people. However, it was unclear in what way drama therapy was aiding in social development which is a gap that needs to be filled in research (Kehl, 2021).

Pordanjani (2021) also found a significant connection between drama therapy and social development in autistic children. More specifically, this study found that drama therapy provided
the children with an example of what social skills look like so that they could learn from the characters they were portraying. They also argued that drama therapy provides a space where autistic children can freely be themselves which can enhance their sense of identity instead of diminishing it like in other kinds of interventions.

Having a creative outlet like drama therapy can have many benefits according to the theory of divergent thinking (Acar & Runco, 2019). In the same study, it is argued that this theory has existed for many years and has been changed many times, but at its core, it suggests that people can think in uncommon ways that utilize creativity instead of logic. This study further suggests that this is essentially the idea that there are individuals who think in different and typically more creative ways. Improvisation, which is often a facet of drama therapy, has also been shown to increase divergent thinking (Hainselin, 2018). Additionally, there has been research on the benefits of divergent thinking on empathy and social skills such that those who have been taught to think in divergent ways tend to have higher rates of empathy and better social skills (Takeuchi et al., 2014).

There has also been an association found between autistic people and higher rates of atypical responses to divergent thinking questions and tasks (Best et al., 2015). However, the same study found there was lower fluency, or quantity of responses, from autistic people rather than their neurotypical peers. This could lead to the idea that autistic people are capable of divergent thinking, which could help in increasing social skills if they are exposed to creative interventions.

There have also been studies on the benefits of scripts and drama for literacy in people with ASD (Melville, 2022). Literacy could also help with social skills in that there are many opportunities for clubs and groups surrounding reading and writing, which can be good spaces to
make friends and communicate about specific interests. Many autistic people struggle with making and keeping friendships (Sosnowy et al., 2019) and having a place to meet people and talk about specific things can be a great way to find lasting friendships. Overall, drama therapy could be a useful tool for increasing social and communication skills in and out of school settings and can help with allowing autistic people to have a place to practice unmasking.

Study Overview

There are gaps in the current research including how social and communication skills learned in drama therapy play into everyday life. There is research on the benefits of drama therapy for social and communication skills in autism but there is not clear research on how that continues when the autistic people are not actively in drama therapy. The research is also minimal on whether drama therapy could prevent or help in preventing post-traumatic stress. Furthermore, there is little research on whether drama therapy could be generally a better intervention than ABA for autism. Drama therapy and autism specifically have not been researched very often and it is an area to be studied more in general, however, the topics listed are aspects that could really help the autistic community if there was research on it. This proposed study hopes to cover those topics.

The first study will serve to better understand whether drama therapy can help in developing the social and communication skills of autistic youth. The children will first be preliminarily observed on their social and communication abilities. Next, their caretakers will fill out surveys on how their social and communication skills are at home. Then the child participants will participate in a 3-month course of drama therapy followed by the final observation to find any differences in their skills from prior to drama therapy. Caretakers will
then be asked to fill out the same surveys from the beginning again to see how skills have changed at home.

The second study will serve to discover if drama therapy could be a better intervention option for autistic people and if it could potentially lower the risk of post-traumatic stress responses. This study utilizes two groups of autistic adults, one that was exposed to drama therapy in childhood and one that was exposed to ABA in childhood. They will first fill out a survey to share how many traumatic experiences they have endured and which of the interventions they were exposed to. If a participant has not experienced any traumatic events, they will be thanked, debriefed, and dismissed. Lastly, the remaining participants will fill out another survey to assess their level of post-traumatic stress responses.

**Research Aims**

The goal of this study is to help cover the gaps in prior autism research by focusing on the impacts drama therapy could have on social and communication skills and the potential continued impact on their lives post-drama therapy. This proposed study will be broken into two smaller studies to address the gaps in the current research. The first study will focus on the benefits of drama therapy for social and communication skills in childhood. However, this differs from previous research because there will be a follow up with the caretakers and the child participants after the drama therapy course has concluded to see how the improvements carry into their everyday lives.

The second study focuses on post-traumatic stress in autistic adults. It will aim to compare exposure to drama therapy in childhood or to ABA in childhood to see which group is more likely to experience post-traumatic stress. The goal of this study is to provide some insight on which intervention is better and whether drama therapy could be useful in preventing
post-traumatic stress in adults on the spectrum. The relationship between drama therapy and potentially preventing post-traumatic stress in autistic individuals is a gap in current research, which is attempting to be filled with this study.

**Hypotheses**

The first hypothesis is that participating in drama therapy will increase the social skills of autistic youth as compared to participants’ baseline social skills prior to drama therapy.

Secondly, it is hypothesized that participating in drama therapy will increase the communication skills of autistic youth as compared to participants’ baseline social skills prior to drama therapy.

Lastly, it is hypothesized that drama therapy in childhood will lead to a lower risk of trauma, PTSD, and PTSD-like symptoms into adulthood. Many studies done on drama therapy did not check on how it affected patients in their lives after completing the intervention.

**Study 1**

The first study will focus on how drama therapy could potentially increase social and communication skills in children with autism spectrum disorder.

**Proposed Method**

**Participants**

Prior research suggests using a medium effect size with a power of 0.8 (Beadle-Brown et al., 2018). To maintain that effect size ($\alpha=0.05$), approximately 27 participants (Faul et al., 2007) will be recruited to represent the population of children with ASD. For this study, participants will consist of children with ASD who are between the ages of 8 and 12 at varying levels of support needs. The goal would be to have an equal number of participants in each of the three levels of support needs.
Participants will be recruited through ads on social media groups for autistic people and parents of autistic children, mailing lists for organizations focused on autism, and school bulletin boards. It will also be listed in the ad that participants will receive 3 free months of drama therapy and will be able to choose a stim toy from a prize box at the end of each week. Participants will only be eligible for the study if they have never participated in drama therapy before. Any other interventions they have had prior are acceptable and should not affect the results of this intervention.

**Materials**

The study will consist of observations, surveys, and 3 months of monitored drama therapy.

**Social and communication skills observation.** This study will utilize the Autism Diagnostic Observation Schedule–Generic (ADOS; Lord et al., 2000) which was created for autism diagnosis in children but focuses on the social and communication aspects of autism, specifically in an observation setting. The observations will have the participants interact with confederate neurotypical children in 12 activities over four 30-minute periods. The periods will be broken into 2 periods per day for 2 consecutive days and the researcher will code the interaction in terms of their social and communication skills.

The schedule has a general list of task themes and then has more specific instructions for each level of ability. The first task has participants complete a collaborative building task where they are given blocks and asked to build any kind of structure. Next, they will be asked to play a make-believe game, the type of game is not specified by the schedule intentionally to assess the participants’ imagination and communication abilities. This task will be followed by a break. After the break, the child participants will have discussions about cartoons, emotions, friends, and social difficulties. This study will involve autistic people of varying language abilities so the
last section can be adjusted for participants to use nonverbal communication including art, talking boards, acting out what they mean, writing, or text-to-speech applications. Next, they will be asked to write a story together and then each will draw a picture associated with the story and will describe what they drew. Again, these tasks will be altered for language ability.

The use of this schedule in this study is important because it provides a structure for coding and can be adjusted based on the needs of the participants involved. Each task in the scale is measured based on different social and communication criteria on a 3-point scale with 0 being no evidence of atypical behavior and 2 being significant evidence of atypical behavior. Some of the criteria include using words or phrases in ways that are not entirely correct or stereotyped, atypical eye contact, facial expressions, and social interaction quality. It will be scored by 2 research assistants who will watch and code the entire observation. They will be briefed beforehand on what each code means. The ADOS has high interrater reliability and validity according to the original test from Lord et al. (2000).

**Social and communication skills caretaker perspective.** This study will utilize the Social Communication Questionnaire (SCQ; Rutter et al., 2003) to better understand how these skills may change at home. This questionnaire is a series of 40 yes or no questions that measure an autistic child’s ability to socialize in what is considered a typical way. One example of a question provided asks “does his/her facial expression usually seem appropriate to the particular situation, as far as you can tell?”. Generally, this scale is used during observations but in this study, caregivers will complete the scale about their child and what they see happening at home. Additionally, it would be adjusted the way this questionnaire is presented by changing the possible responses to a 5-point Likert scale (1- *none of the time*, 3- *about half the time*, 5- *all of the time*). This will provide a better understanding of whether the children do these things
because if it were yes or no, a caretaker might have trouble determining which it would be depending on how often their child does the behavior. Research suggests this scale has high validity and reliability (Avcil et al., 2015).

**Communication caretaker perspective.** This study will utilize an Interpersonal Communication Inventory (ICI; Bienvenu, 1971) for assessing the caretaker’s perspective on their child’s communication skills at home. This inventory is a list of 20 questions regarding typical interpersonal communication skills. One example of a question asks, “In a discussion is it difficult for you to see things from the other person’s point of view?” For this study, I would use a 5-point Likert scale (1- none of the time, 3- about half the time, and 5- all of the time). This would also be a part of the survey given to caregivers to see what the child is like at home. Due to the pronouns of the questions being phrased towards the person responding, they would be changed to “your child” instead of “you”. Bienvenu (1971) argues there is high reliability but that there needs to be further testing done on validity. However, from the questions, they seem to have high content validity.

**Drama therapy.** The drama therapy portion of this test will vary based on participants’ needs. The drama therapist will familiarize themselves with the participants and then suggest some activities and see what the participant would be excited about. Two examples of specific activities include improvisation and puppetry (Sherrell, 2022). For improvisation, it can be customized to the participant, but it generally involves playing improvisation games as an exposure to potential real-world conversations they could have. Puppetry involves imaginative play where participants can have puppets take on roles and help them to practice having conversations in a fun environment (Brixton Dramatherapy, n.d.). Many of the tasks and activities will be up to the participant and the drama therapist to decide.
Procedure

This study has many steps and takes place over several months and will be conducted in two different locations. The first is the lab where the observations can happen. The primary concern would be informed consent forms from caretakers. Next, the researcher would get to know the child participant as a way of familiarizing themselves and would then ask for assent from them. Then, while the first day of observation takes place, caretakers will be asked to fill out the ICI and the SCQ about their child. The second location would be at a rented-out theatre space where the drama therapist would be able to get participants up on stage. The drama therapy would take place twice a week over 3 months in this theatre space.

At each session, assent will be asked of child participants to make sure they still want to be involved. Additionally, at the second session of every week, the participants will have the opportunity to choose something from the prize box. After the drama therapy course is completed, participants and caregivers will be called back to the lab for the second observation and caretaker survey. In addition to the final survey, caretakers will fill out a form about the child participants’ demographics. Lastly, the drama therapist will observe the participants’ social and communication skill improvement over the 3 months using the same scales. When those are all completed, the researcher will debrief with the participant and the caretaker. There will be a counselor present at the debriefing in case there is any additional support needed.

Ethical considerations

This study includes a protected and vulnerable population and potentially sensitive information. However, understanding if there is a better intervention for autistic youth that could increase social and communication skills would be a big step in autism research. The previous research on drama therapy has indicated positive results for autistic individuals and is often used
as a trauma-informed therapy (Jiang et al., 2023; Pordanjani, 2021). Child participants could get increased social and communication skills and if not, they would still receive free drama therapy. This study does rise above minimum risk, however, it is likely to benefit the participants and the autistic community as a whole based.

Additionally, the protected and vulnerable populations that would be studied are autistic children. These populations must be used because the only way to understand if this intervention could be helpful or even better than the common interventions currently used is to try them and study their effects. There is little to no reason to believe drama therapy could increase any risk of trauma or negatively impact the participants in any way based on previous research and the same research indicates it could be beneficial (Jiang et al., 2023; Pordanjani, 2021).

This study also involves minors who are unable to provide legal consent. Informed consent from caregivers will be the first step of the study and it will be asked that they discuss the study with their child before signing the form. At the beginning of each day, assent from the child participants so that it can be certain they want to participate. Furthermore, participation is completely voluntary and child participants will be made aware that they can stop participating in the study at any time for any reason without penalty, especially if they feel uncomfortable or unsafe in any way.

This study does not use deception of any kind and participants will know the plan at every point of the study. All data collected will be stripped of any identifying information and participants’ data will be confidential by the analysis stage. Any data collected, regardless of who is collecting it, will use a participant ID rather than their names to make confidentiality possible. Data and hard copies of consent forms will be stored in two separate locked file
cabinets in the lab. This study does rise above minimum risk, however, the benefits and the possible help it could provide to the larger community of autistic people outweigh those risks.

**Anticipated Results**

**Data Analysis Strategy**

This study will utilize a 2 (before vs after exposure to drama therapy) x 2 (social skills vs communication skills) repeated measures design to assess whether exposure to drama therapy improves social and communication skills. A paired samples t-test on each dependent variable will be conducted to analyze all data. The ADOS is coded to focus on specific traits associated with social and communication skills in autism. Therefore, the ADOS data can be split into social skills and communication skills categories based on the type of skill each point is associated with.

**Anticipated Results**

It is anticipated that social and communication skills will be improved from before exposure to drama therapy to after. This is predicted because drama therapy has been associated with improved social and communication skills in preliminary clinical research (Beadle-Brown et al., 2018; Kehl, 2021; Pordanjani, 2021). It is believed these social skill improvements will be seen not just during the sessions but in home life as well. Communication skills have also been seen to increase with drama therapy in several studies (Beadle-Brown et al., 2018; Kehl, 2021; Pordanjani, 2021). It is important to note communication improvements can be made in both nonverbal and verbal communication. Several researchers have found a connection between social development and drama therapy in autistic patients which is why this should hold true in this study as well (Beadle-Brown et al., 2018; Kehl, 2021; Pordanjani, 2021).
Study 2

The second study will focus on whether drama therapy in childhood could potentially lower the risk of post-traumatic stress responses to traumatic events in adults with ASD as opposed to adults with ASD who were exposed to ABA in childhood.

Method

Participants

Prior research suggests using a medium effect size with a power of 0.8 (Rumball et al., 2020). To maintain that effect size ($\alpha=0.05$), approximately 128 participants (Faul et al., 2007) will be selected after the presence of a pre-screening to represent the population of adults with ASD who were either exposed to ABA or drama therapy in childhood and have experienced at least one traumatic event. For this study, participants will consist of approximately 64 adults with ASD who were exposed to ABA in childhood and approximately 64 adults with ASD who were exposed to drama therapy in childhood. Participants will not be eligible if they have done both drama therapy and ABA and participants must have participated in one or the other. Both groups will be between the ages of 18 and 30 at varying levels of support needs. Some participants may have been in childhood more recently than others so there will be a minimum time of one year since exposure. Research suggests psychological treatment for PTSD can show benefits at least 12 months post-exposure to the treatment (Weber et al., 2021).

Autism spectrum disorder has been more commonly diagnosed in males since its codification (American Psychiatric Association, 1952). This means it is expected that the sample will most likely have more male participants than female participants. Furthermore, according to Pham et al. (2022) White individuals made up 56% of the children diagnosed with autism in 2021. This means it is more likely that the study will be predominately White. It will also be
important to attempt to get a wide range of support needs to cover more of the autism population. Lastly, this study will most likely take place in the United States for ease of access.

Participants will be recruited through ads on social media groups for autistic people and parents of autistic people, mailing lists for organizations focused on autism, and therapy offices. It will also be listed in the ad that participants will receive 3 free months of drama therapy and will be given a dollar per hour of participation. The compensation differs from study 1 because adults may not be as interested in a prize box compared to children, the compensation should end up being about the same quantitatively. Additionally, the 3 months of drama therapy are used as an incentive but the use of drama therapy as compensation is not contingent on its effectiveness in study 1. Whether it is directly effective with skill development in autistic people or not, drama therapy does have evidence supporting its use for trauma healing (Jiang et al., 2023; Sherrell, 2022). Participants will be given a pre-screening when they sign up that involves completing the Life Events Checklist (LEC-5) (Weathers et al., 2013) and indicating whether they completed ABA or drama therapy. If they have not experienced at least one traumatic event they will be thanked for their time, debriefed, and dismissed.

**Materials**

The materials for this study will consist of the pre-screening with the LEC-5 (Weathers, Blake, et al., 2013) and a multiple-choice question asking which intervention participants were exposed to. Then, the rest of the study that will use the PTSD Checklist for DSM-5 (PCL-5; Weathers, Litz, et al., 2013). Lastly, demographic information will be collected with a series of multiple-choice questions.

**Traumatic Events.** This study will utilize the Life Events Checklist for DSM-5 (LEC-5; Weathers & Blake et al., 2013) to assess how many traumatic events participants have
experienced. This checklist consists of 17 prompts that each represent an example of a traumatic event participants could have experienced. Every prompt has the same check box options of happened to me, witnessed it, learned about it, part of my job, not sure, and does not apply. One example of a prompt is, “physical assault (for example, being attacked, hit, slapped, kicked, beaten up)”. Participants can also check multiple boxes if more than one answer applies. Though there is not much psychometric data on the LEC-5, Weathers et al. (2013) argue that the checklist has not changed much since the original LEC. Due to the lack of substantial change, they also argue any psychometric data for the LEC should also work for the LEC-5. The LEC had strong evidence of having high validity and reliability (Gray et al., 2004) meaning the LEC-5 should as well.

Post-traumatic stress symptoms. The PTSD Checklist for DSM-5 (PCL-5; Weathers & Litz et al., 2013) will be used in this study to measure participant levels of post-traumatic stress. This checklist consists of 20 questions each with responses to be provided on a 5-point scale ranging from not at all to extremely. One example of a question asks, “Loss of interest in activities that you used to enjoy?” Each question refers to things they may have experienced in the past month. This scale has strong reliability and validity and is considered a good measure of PTSD symptoms (Blevins et al., 2015).

Procedure

Both the pre-screening and the test section of this study will be run in a lab so that a counselor can be present in case anyone needs support as these are sensitive questions. The first step in this study would start with participants filling out informed consent forms. Due to the risk involved in this study, the consent process will be highly structured. It will involve participants having a meeting with the researcher and a trauma counselor where the researcher will disclose
that there will be questions about trauma and post-traumatic stress symptoms. The consent document will then be read aloud to the whole group by the researcher. Participants can then decide if they want to continue with the study, they will also be informed that they can remove themselves from the study at any point. Then the participants would complete the LEC-5 and a one question survey asking which intervention they were exposed to. If they have not marked any of the traumatic events as something they have experienced in some way they will be thanked for their time, debriefed, and dismissed. If they select at least one of the options, they will proceed to the next survey which will be the PCL-5 and the demographic questions. Following the PCL-5, participants will fill out a short survey about their demographic information. When those are all completed, the researcher will debrief each participant and provide them with their compensation and voucher for drama therapy. There will be a counselor present during the debriefing as well in case there is any additional support needed.

**Ethical considerations**

The ethical considerations for this study are the same as the previous study except the new inclusion of PTSD and trauma. However, understanding if there is a better intervention for autistic youth that could potentially lower the risk of trauma and PTSD in autistic adults would be a big step in autism research.

The protected and vulnerable populations I would be studying are autistic adults. This population must be used because the only way to understand if this intervention could be helpful or even better than ABA in preventing post-traumatic stress responses is to study their effects. Additionally, this study does ask for information regarding experience with trauma or PTSD. Due to the potentially triggering nature of those topics, there will be measures taken to ensure the comfort and safety of the participants. Those measures include making all questions optional and
by having a counselor available during the study and during debriefing in case at any point a participant becomes uncomfortable.

There will also be an informed consent form at the beginning of the study in which participants will be briefed that the study includes questions surrounding trauma and post-traumatic stress. Additionally, they will be informed that participation is completely voluntary, and they can stop participating at any time for any reason, especially if they feel uncomfortable or unsafe in any way. There is no deception of any kind in this study and participants will know the plan at every point of the study. All data collected will be stripped of any identifying information and participants will be confidential by the analysis stage.

This study is significant risk based on the themes around trauma and post-traumatic stress and the population of autistic adults. However, the benefits outweigh the risks because it is necessary information to potentially protect the autistic community from further risk of post-traumatic stress. It is also the only way to collect the data needed on post-traumatic stress levels. This information could be integral to the research on interventions for ASD and to which interventions will be most commonly used in the future.

**Anticipated Results**

**Data Analysis Strategy**

This study utilizes a factorial analysis of covariance (ANCOVA) with a dependent variable (post-traumatic stress responses), a predictor variable (type of therapy), and a covariate (number of traumas experienced). In this study, the two variables are the type of therapy exposed to in childhood, which includes ABA or drama therapy, and the likelihood of experiencing post-traumatic stress.
Anticipated Results

It is anticipated that those who were exposed to drama therapy in childhood would have a lower risk of developing post-traumatic stress responses than those exposed to ABA in childhood. The covariate will be utilized in that it is anticipated that individuals will be more likely to experience post-traumatic stress when the number of traumas experienced by the participant goes up. Therefore, participants who experienced a high number of traumas (8 or more) and were exposed to ABA are predicted to have the highest rates of post-traumatic stress. Overall, it seems likely that exposure to ABA would lead to higher rates of post-traumatic stress responses in autistic adults than exposure to drama therapy regardless of the number of traumatic events experienced.

According to Rumball et al. (2020), Autistic people are more likely to experience post-traumatic stress than non-autistic people in those who have experienced traumatic events. Additionally, roughly 46% of autistic people exposed to ABA met criteria for post-traumatic stress in a study by Kupferstein (2018). Furthermore, there is evidence (Jiang et al., 2023) that drama therapy could have positive effects on general mental health which could lead to lower post-traumatic stress responses as well. Due to the encouragement individuals receive around masking in ABA and the link between masking and post-traumatic stress (Rudy, 2023; Ross et al., 2022; Shkedy et al., 2021), it seems likely that those exposed to ABA in childhood would be most likely to experience post-traumatic stress regardless of the number of traumas experienced. Rumball et al. (2020) found that people with autism were more likely to experience trauma or PTSD at some point in their lifetime. I think drama therapy could lower that risk because it is an alternative type of intervention to the ones commonly used and could help with unmasking in childhood.
Scholarly Merit

Drama therapy has been researched for its benefits across many different fields. According to The North American Drama Therapy Association (n.d.), it is an effective treatment for grief, isolation, conflict, addiction, depression, anxiety, and many other struggles. However, drama therapy research for autism spectrum disorder specifically has not been as thoroughly studied. There are a few studies showing a connection between increased social skills and drama therapy in autistic youth (Beadle-Brown et al., 2018; Kehl, 2021; Pordanjani, 2021), however, there needs to be more research done on the topic. More research would help to solidify the idea of drama therapy being a better intervention.

Additionally, there is not a lot of research done on whether drama therapy in childhood could help lower the risk of post-traumatic stress responses in autistic adults. For these reasons, it is important to further research drama therapy for autistic people and its potential benefits. Increasing the research that is available about what is helpful for autism is very important so that autistic people are receiving the best care that they can. If drama therapy could be a good alternative to interventions like ABA, it is vital that it is further researched, and those beneficial claims have more evidence to support them.

Broader Impacts

Autism is a highly misunderstood disorder, and more research means more understanding. This proposed study is important because it could help not just in finding what interventions might work better, but also in better understanding autistic people and their needs. Masking for example is harmful to autistic people (Bargeila et al., 2016; Cassidy et al., 2023; Han et al., 2021; Sandoval-Norton et al., 2019) and it is important to find a type of intervention that can help in stopping those behaviors instead of encouraging them. Lastly, this study was
designed by an autistic person. Much of the research done on autism is created and run by non-autistic people meaning they can only understand autistic people so much. Having research done by autistic people for autistic people provides an insight that could lead to big changes in the understanding of autism.

Many of the studies done about autism and the best interventions for autistic people are done by neurotypical or otherwise non-autistic researchers. This means that a lot of the information out there is talking for the people it is researching without including them. As an autistic woman, I want to be a voice for my community and speak about things that I believe could help those like me.

If the hypotheses are supported, this study could be very important in moving away from interventions that could potentially be harming autistic people, specifically ABA. From the previous research, it seems like drama therapy would help to increase social and communication skills but would not have a drastic negative effect on the lives of autistic people. This study has two parts that will investigate both the social and communication skill development in autistic youth and the potential lower risk for post-traumatic stress responses to trauma in autistic adults. There is also evidence that drama therapy could function as a treatment for PTSD as Giacomucci & Marquit (2020) found. This further leads to the idea that having access to drama therapy in childhood for autistic people could help in lowering the risk of post-traumatic stress responses to trauma later in life. If this study could help in the transition toward better, more humane interventions, that would be the ultimate goal.
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