

Dungeons, Dragons, and Drama Therapy: A Digital Approach for Teenagers on the
Autism Spectrum

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ABSTRACT

Digital Dungeons, Dragons, and Drama Therapy for Teenagers on the Autism Spectrum

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This research seeks to answer the question of whether drama therapy can make use of role-playing games designed for tabletop, specifically Dungeons and Dragons, and digital technology, in a way that is therapeutic for adolescents with autism spectrum disorder. This theoretical intervention research will build on the work of previous drama therapists to demonstrate how Dungeons and Dragons can be a useful distanced intervention that incorporates existing tools into a flexible and imaginative play space between the therapist and client.

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Research Question

Adolescents with autism spectrum disorder often require assistance or treatment with respect to social interactions. Dungeons and Dragons is an established fantasy game that is often played online. Is it possible to reconstruct Dungeons and Dragons, as a viable online drama therapy intervention for this population?

Introduction

Drama Therapy

Drama therapy is an extremely flexible mode of therapy. It incorporates the dramatic medium and space to allow clients to better get in touch with their feelings. In contrast to other types of therapies, such as behavioural therapy or psychoanalytic talk therapy, drama therapy has the advantage for certain patients of not “feeling” like they are in therapy. Thus, patients are able to connect to their innermost thoughts and desires through a sense of play and imagination. There are many modes and interventions available to drama therapists. This paper will propose the use of an adapted version of Dungeons and Dragons as a drama therapy intervention that can be mediated by technology to be more engaging. Although the focus of this research is adolescent clients living with autism, the interventions can be used for a wide variety of patients, with appropriate modifications.

Due to social distancing measures resulting from the COVID-19 pandemic, many therapists have been forced to switch to videoconferencing, bringing into question whether, and to what degree, there will be a return to the classic model of psychotherapy with client and therapist interacting in the same physical space (Gopnik, 2020). Even before the pandemic, teleconferencing with patients was being increasingly used (Hilty et al., 2020). Thus, a form of

therapeutic intervention which can be easily used where the drama therapist and the client are distant is an important tool to further examine.

Dungeons and Dragons

Dungeons and Dragons is a popular tabletop roleplaying game that was released in 1974. Although not the first of its kind, it has remained popular in the cultural sphere through its many iterations. In this game players role-play as fantasy characters, narrating the character's thoughts, actions, and dialogue. A dungeon master/game leader describes the world and directs the co-created narrative by using dice rolls to determine to what degree players' desired actions will succeed or fail.

In a traditional Dungeons and Dragons game the dungeon master/game leader will arrive at the session having already planned a back story describing the setting and what characters will populate the fictional world. Players create a character by using a complex character sheet, which lays out the characters' strengths, weaknesses, inventory (what they are carrying), and bonds (their relationships). This is also sometimes done prior to the commencement of the game. To begin, players are introduced to the setting through the dungeon master/game leader's narration and the players must narrate the actions they wish their character to take. Information on the character sheet of each player dictates what actions they are able to take and what numerical value must be added or subtracted from each dice roll, based on the characters' proficiencies. Ultimately, the dungeon master/game leader will be the one to dictate whether any actions a player attempts to take succeeds or fails. However, this decision is based on how they have designed the settings and non-player characters to contest and challenge the players. It is possible for the dungeon master/game leader to control the flow of the game by manipulating the setting and non-player characters and thus planting elements of conflict into the game. Thus,

preparation for the game may involve a considerable amount of work from the dungeon master/game leader.

Although typically Dungeons and Dragons is a multi-player game, it can also be played as a two-person game. For the purposes of this intervention, the researcher will primarily focus on using Dungeons and Dragons as a two-person game; the therapist and the client, with the therapist taking on the role of the dungeon master/game leader. This may lead to some strong transference (Yalom & Leszcz, 2005) towards the drama therapist in their capacity of dungeon master/game leader. This could be different, and may be stronger, than the type of transference that would typically occur with the therapist due to the social nature of the game, the directive role of the therapist, and the fact that it relies so heavily on role play. The therapist needs to be mindful that transference can be greater when working with individuals than when working in a group. The therapist must furthermore be cognizant of their role as an active authority figure and be aware of the transference that can lead to. If this transference is so strong that the client for example yells, “You never let me do the things I want to” the therapist might consider relaxing the rules of the game mid-session.

Playing Dungeons and Dragons as a group affords more opportunity for interaction, including cooperation and conflict. Indeed, an underlying theme of the game is the group dynamics of cooperation, conflict and storytelling. While some of this may be lost playing with two people, there is still sufficient interaction between the therapist as dungeon master/game leader, and the patient as player, to sustain interest and create interactions which can be helpful in therapy, as described in more detail below.

Anecdotal evidence from the author during a practicum experience suggests that being put into social situations in the realm of Dungeons and Dragons affords teenage clients the

opportunity to practice social skills, such as working cooperatively, taking turns, and understanding the motivations of others, in controlled and safe environment and at their own pace. During the practicum the author had the opportunity to run a game of Dungeon and Dragons over the course of two sessions with a group of teenagers, some of whom had autism spectrum disorder.

Autism Spectrum Disorder

Autism is increasingly diagnosed in our modern age (Williams, 2015). Historically autism spectrum disorder was misunderstood, with blame being placed on the parents - particularly the mother. Modern research has determined however that autism is a neurological disorder with a strong genetic basis (Faras et al., 2010). The term “spectrum” in autism spectrum disorder refers to the fact that there is a range of impairment caused by autism, from those who are incapable of speech or self-care through to “highly functioning” autistic individuals who may excel in various aspects of their life. It is characterized by “severe and pervasive impairments in reciprocal social interaction skills and communication skills and by restricted, repetitive, and stereotyped behavior, interests, and activities” (Lubetsky et al., 2011 p.4).

Individuals living with autism spectrum disorder, even at the higher end of the spectrum, often experience difficulties interacting and fitting in with their peers. This can be due to difficulties with anxiety (Solomon et al., 2008), and the fact that people with autism spectrum disorder are often prone to experiencing sensory overload – e. g., in a school cafeteria. One of the more common challenges faced by people living with this disorder involves the development of the age-appropriate social interactions they face daily.

Autistic teenagers may be in therapy for a number of reasons, including difficulty communicating with peers, and with understanding many social conventions, such as body

language, facial expressions, tone of voice, and the ways people behave in public spaces. Some examples of this are not being able to read facial expressions, inappropriate communication such as being too blunt, misunderstanding of subtlety of language and the inability to “read” body language (Ziermans et al., 2010; Solomon et al., 2008).

Treatment for autistic teenagers

Teenagers on the autism spectrum get referred for treatment due to the personal and social difficulties referred to above. The type of professional that they are referred to will depend upon the specific type of problems that they are encountering as well as the familiarity and biases of the referring professional. Evidence-based treatments used for this population vary widely, but often find their basis in behavioral therapy (McCrimmon et al., 2014). However, case studies suggest that drama therapy can be an effective tool for teaching autistic children to better express themselves and deepen their relationships with others by working individually with drama therapists (Caplan & Harnden, 2006). Drama therapy has also shown to be effective for preadolescent high functioning autistic children when working in groups, assisting them with social skills and managing problem behaviours (D’Amico et al., 2015).

Why Dungeons and Dragons for autistic teens?

According to the American Psychiatric Association characteristics of autism spectrum disorder fall into two categories. The first, social and communication issues, includes difficulty in carrying on conversations and understanding social cues, difficulty in understanding the reactions of others, and difficulty in directing their own behaviour appropriately. They may also have issues with formal or organized thinking, for example, verbal processing (Solomon et al., 2008). Social and communication issues may manifest as having trouble getting along with others because of behaviour and reactions which may seem “off” to peers, or being unaware of

standard social rules and conventions such as body language and tone. The second category, less important for this study, includes physical behaviours and reactions, such as repetitive body movements and increased sensitivity to stimuli.

Dungeons and Dragons is uniquely suited to helping clients develop awareness and understanding of such social issues. Dungeons and Dragons allows clients to break down social situations into more manageable pieces. During a game, time can be extended as needed to make decisions and process events, and can allow for discussion between therapist and client. The fact that the game takes place in a fantasy world, dramatically distanced from reality, makes it easier for events in game to be processed at the end of session. This dramatic distance may fuel a sense of objectivity when analysing the social situations that appear in the game. Dungeons and Dragons can also offer an opportunity to practice verbal and nonverbal processing. Through the therapist's coaching, the clients can be given the opportunity to make choices and express themselves in a variety of other ways. For example, within the game one inevitably must negotiate conflict, change plans and deal with disappointment. All of these may be issues that teenagers on the autism spectrum find challenging. Practicing them in a controlled setting and discussing their feelings with the drama therapist, either during the game or in the debrief can provide them with insights. This might also give them the opportunity to extend the therapeutic benefits by participating in one of the many existing Dungeons and Dragons communities, for clients who are ready for this next step.

Outline

A literature review will discuss the perception of Dungeons and Dragons in the mental health community, and its perceived and actual therapeutic value. The literature review will also

cover the core drama therapeutic processes pioneered by Phil Jones (2007), as well as the concepts of role and ritual in drama therapy. Ways in which technology has been incorporated into psychotherapy will also be examined. It is beyond the scope of this paper to discuss all the ways that digital technologies could be incorporated by drama therapists. However, focusing on different ways a single intervention could be modified to meet the needs, abilities and technological literacy of both the drama therapist and client could offer guidelines for drama therapists wishing to take this research further. It is this researcher's hope that by providing Dungeons and Dragons as a framework, therapists will be able to connect the proposed intervention to interventions they conduct in their own practice. Sand tray therapy will also be described in detail, as it is an assessment method that can be easily compared to the intervention strategy incorporating Dungeons and Dragons and digital technology.

Following the literature review, the Methodology/Research Methods section will outline the framework used to develop the Intervention Strategy. The Intervention Strategy is followed by the Discussion section, in which potential strengths and weaknesses of such a treatment plan are examined and evaluated based on their connection to multiple theories. This section features an imagined vignette demonstrating how this intervention could function. The Discussion section will feature an analysis of how drama therapists could potentially test and modify the resulting guidelines produced by this research. Finally, the Conclusion will review some of the important factors around this intervention and suggest further study that could confirm that Dungeons and Dragons could be used as a valid therapeutic intervention.

While digital technology, or more specifically digital art media, has been incorporated into art therapy for a variety of populations (Garner, 2017), many drama therapists are only now, in light of recent global events, learning to incorporate digital technology into their practice.

Videoconferencing is becoming a norm, not only in treatment, but in society. Zoom, MS Teams, Slack, WhatsApp and a myriad of other videoconferencing platforms have become household words in the last year.

The intervention strategy set forth in this paper is not meant to be prescriptive and is open to modification depending upon the situation. Digital technologies proposed in this paper could potentially maintain their value even after social distancing measures are no longer necessary and could offer new modes of expression and play for drama therapists. With them, different worlds or scenarios could be created in the therapy space to meet the needs and specifications of the client.

Literature Review

Dungeons and Dragons

In support of the therapeutic potential of Dungeons and Dragons, a case study was published in which “a young schizoid man” was able to explore his fantasy life through Dungeons and Dragons, achieving personal breakthroughs by analyzing and processing his in-game actions, and the real personal desires that led him to take those actions, in subsequent sessions with his psychotherapist (Blackmon, 1994). Another case study documented the use of imagery within Dungeons and Dragons as a means of connecting with the client. While initially resistant to art therapy, exploring his experience with Dungeons and Dragons allowed the client to overcome resistance and successfully engage in the art therapy process. (Raghuraman, 2000). However, neither of these case studies involved the client playing Dungeons and Dragons in session, but rather, using their experience of playing the game outside of session and bringing material from the games into the psychotherapeutic space (Blackmon, 1994; Raghuraman, 2000).

Dungeons and Dragons has also been described as offering an opportunity for simulated violence in a flexible but controlled way (Shank, 2015). From a drama therapy perspective, this could be described as distanced play, in that the actions may be completely removed from the realm of reality and highly stylised in execution. This is in comparison to underdistanced play where the actions and emotions so closely simulate reality that it can make it difficult for participants to reflect on the role they are taking (Landy, 2009). For example, it may be easier for a client to analyse the way they deal with confrontation in their role as the knight, than to analyse the feelings that they had in a confrontation in the school hallway. This may make it easier to face emotions due to the artificiality of the narrative. Analyzing the themes that emerge for players who participate in Dungeons and Dragons, one researcher found that “(1) democratic

ideologies; (2) friendship maintenance; (3) extraordinary experiences; and (4) good versus evil” (Adams, 2013, p. 69) were themes that met ““group members’ real-world needs” through “symbolic in-game interactions” (Adams, 2013, p. 69). More recently, Dungeons and Dragons has emerged as a therapeutic intervention for some drama therapists, with a therapy group in the United States known as Game to Grow. This group, in addition to using Dungeons and Dragons and other games, is in the process of creating their own manualized therapeutic tabletop roleplaying game to build social skills as an intervention for children and adolescents, especially those with autism. Game to Grow runs hour and a half long therapy groups in which Dungeons and Dragons is played (Game to Grow History). These social groups are sometimes run by a drama therapist, essentially making these sessions drama therapy sessions. The premise Game to Grow has posited is that by exposing individuals with autism to imagined realities that could create sensory overload if experienced in reality, clients will gain some level of mastery over their mind.

Despite the academic examination of role-playing games, and their use as an intervention in certain clinical spaces, the author has found little that has been academically written on the therapeutic value of roleplaying games in psychotherapy sessions, and nothing on their unique position to engage imagination in times of social distancing. Academic references to Dungeons and Dragons featured above focused on the psychological impact of playing the game outside of therapy, or imagery from the game that was brought into therapy through talk or drawing. Game to Grow has not yet published academic publications regarding their work using Dungeons and Dragons as an intervention. In fact, Dungeons and Dragons may be the ultimate tool to titrate distancing, as it can be played in a very distanced way, via text chat or videoconferencing or in a very embodied way, either in person or through the mediation of virtual or augmented reality.

Before examining how Dungeons and Dragons could be used as a vehicle for drama therapy, we will first look at how others within the mental health field view the game. Studies have been conducted regarding the perception of Dungeons and Dragons by social workers and psychiatrists. These studies have found that some clinicians associate a link between playing role-playing games, such as Dungeons and Dragons, and psychopathology (Ben-Ezra et al., 2013; Lis et al., 2015). There has often been a negative perception of participation in games such as Dungeons and Dragons, and it has been noted that such negative perceptions could very well be the result of a stigmatizing narrative of role-playing games that has been reflected by the media (Ben-Ezra et al., 2013). This is likely, given that a study examining the emotional stability of Dungeons and Dragons players found no significant correlation between participation in the game and psychopathology (Simón, 1987). Rather, the author of this correlational study notes that “there is much evidence that overall playing of games is beneficial and therapeutic” (Simón, 1987). It would seem however, that such stigma may be diminishing given the recent interest in using such games for therapeutic purposes (Games to Grow), as well as the fact that players are now found in all walks of life.

Drama Therapy

Ritual, roleplay, and distance are all central to this research. The latter two are drama therapeutic core processes. The drama therapeutic core processes were developed by Jones (2007) to create a common language that would describe and operationalise the change processes in drama therapy (Jones, 2007). It should be noted that the drama therapeutic core processes are not watertight compartments. There are overlapping themes between the processes. The drama therapeutic core processes are:

- dramatic projection;

- drama therapeutic empathy and distancing;
- role playing and personification;
- interactive audience and witnessing;
- embodiment: dramatising the body;
- playing;
- life-drama connection;
- transformation (Jones, 2007, p. 81).

Dramatic Projection refers to the ability or act of projecting what one imagines into a drama therapeutic space (Jones, 2007), for example, imagining a tree having feelings. This can serve to practice empathy and imagination. In the context of Dungeons and Dragons, dramatic projection can be used to project oneself onto a character and “feel” the character’s emotions.

Drama therapeutic empathy and distancing refers to how close to life enactments created in session are for clients, especially when it comes to how emotionally activating they are (Jones, 2007). Playing Dungeons and Dragons, the therapist and client can control empathy and distancing as appropriate.

Role Playing and Personification refer to the act and ability to play or personify a role in the therapy space (Jones, 2007). Playing a role or personifying another can assist a client by seeing issues, problems or emotions from a different point of view. Role playing is clearly at the core of Dungeons and Dragons.

Interactive audience and witnessing refers to the experience of being and feeling seen, heard and dialogued with as a performer or audience member in the drama therapeutic space (Jones, 2007). This is essentially about relationship. In the context of Dungeons and Dragons, although

the therapist and the client are both active in the game, they are also witnessing each others' interactions.

Embodiment or Dramatising the Body refers to the degree to which individuals are seen to be able to physically embody their emotional and/or intellectual states (Jones, 2007). In Dungeons and Dragons, this can occur when players are acting out their characters' actions and miming their attacks.

Playing or the act of play within the therapy space is considered central to the therapeutic process (Jones, 2007). Play allows for a safe space in which boundaries can be tested. Play is also central to Dungeons and Dragons for similar reasons.

Life-Drama Connection refers to how tangibly the client's actions or enactments in session can be tied to the issues the client faces outside of session (Jones, 2007). In playing Dungeons and Dragons, the therapist and client have control over this aspect of the game in order both to make it a safe space and a useful therapeutic intervention. For example, in debrief, the therapist and client will discuss whether anything that occurred in the game reminds the client of events that occurred in real life or reminds the of significant issues from their life.

Transformation refers to how and whether the client within a drama therapy process has achieved change through the process and its interventions (Jones, 2007). The level of transformation will vary from client to client and session to session. While this researcher posits that transformation can take place using Dungeons and Dragons, the ability to effectively achieve transformation through the therapeutic use of Dungeons and Dragons remains to be tested by future researchers.

Of particular importance to this research is empathy and distancing, also referred to as aesthetic distance, or simply distancing. This concept "is relevant to drama therapy in that the

therapist bases much of his work in examining the dialectics of actor and observer, self and role, one role and another role; and it is in exploring the degree of separation and closeness within these relationships that the therapist realizes his therapeutic goals” (Landy, 1983, p. 175). A client fully immersed in a role and unable to separate themselves from said role is said to be under-distanced. In contrast, a client intellectualizing a role to the point that they are unable to feel the emotions associated with said role is said to be over-distanced. The medium used to take on the role can also affect distancing. For example, operating a puppet will be inherently more distanced than physically taking on a role. Despite this, over-distanced and under-distanced experiences can emerge from enactments through any medium depending on the client’s personal investment in the actor or observer role. Thus, distancing is a continuum with which different levels are suitable for different approaches or even different points in therapy.

Role theory in drama therapy is also a body of work, in and of itself, that branches away from the core processes. Notably, the archetypes or roles that individuals feel most comfortable or uncomfortable playing has been used for assessment purposes (Johnson, 2012). Role theory expands on the ideas of Gestalt therapy, in that it considers how playing certain roles affects our personality, and seeks not just to understand, but also coach the person to find new roles in a way that goes beyond simple role reversal (Landy, 2009). It is important to note that roles constitute cognitive schemas that make up our personality, with the strength and connection of those cognitive schemas being theorised as dictating the degree of integration of our executive functioning ability, or our ability to process from the top-down, with our thoughts triggering our actions, rather than the bottom-up, with our nervous system reacting automatically (Frydman, 2016). This is important to consider, as adolescent brains are still in development and benefit

from top-down processing, especially when the activity is pleasurable (Cozolino, 2010), as is the case in a well-run game of Dungeons and Dragons.

For the past 3000 years ritual and theatre have been essential to the psychological healing process, according to the theories of some scholars (Snow, 2009), with some going so far as to posit that it was ritual and theatre that maintained society during ancient times (Jaynes, 2000). Although the archetypes referred to in the psychotherapeutic community are usually Jungian in nature (Snow, 2009) it is important to recall that one's perception of an archetype will be culturally bound (Jaynes, 2009). It is beyond the scope of this paper to examine the cultural or evolutionary origins of the rituals and archetypes used in Dungeons and Dragons although the game relies upon some common medieval archetypes and personas. Such questions might be examined by future researchers. What is important to consider for this research, is the drama therapist's role in aiding clients to ritualise a time and space (Snow, 2009).

Digital Technology in Therapy

Digital technology is already being incorporated into psychotherapy. Perhaps most notably, virtual reality (VR), where the subject uses a headset to look around a virtual environment, and augmented reality (AR), where the subject uses a headset or screen to view a virtual model projected into their actual environment, like the room they are sitting in, have been used as aids in the treatment of many psychopathologies. These VR and AR interventions have been tested with a wide range of populations (Rizzo & Bouchard, 2019; Kim & Kim, 2020; Temming, 2018; Van Der Mast et al., 2006; Garcia-Palacios et al., 2006). VR programs have also been developed and tested as aids for behavioral therapy with individuals suffering from post-traumatic stress disorder (Botella et al., 2006; Difede et al., 2006; Popovic et al., 2006; Josman et al., 2006; Rizzo et al., 2006; Rothbaum, 2006). They have also been used for

behavioral therapy with patients receiving treatment for eating disorders (Castelnuovo et al., 2006), patients who experienced persecutory delusions (Freeman, Lister, et al., 2019), and individuals with anxiety (Freeman, Yu, et al., 2019), as well as exposure therapy (Inozu et al., 2020) for several specific phobias (Hilty et al., 2020), such as claustrophobia (Tsai et al., 2018), anthropophobia (Jo et al., 2001), and arachnophobia (Patrão et al., 2020), in addition to a fear of public speaking (Koller et al., 2019). For certain phobias, claustrophobia and arachnophobia being prime examples, AR has proved to be more effective for exposure therapy than VR (Patrão et al., 2020).

AR has also been used to help children with autism learn social cues by providing examples of social cues using the program, for example demonstrating facial expressions. (Lee, 2019). Digital technology has proven to be more effective with individuals living with autism the more sensory organs are stimulated (Gokaydin et al., 2020).

In addition, virtual environments/experiences have been used to aid chronic cancer patients with pain management (Garret et al., 2020), as well as intensive care patients experiencing delirium (Suvajdzic et al., 2019). In comparison to speaking with one's therapist through Skype, communicating through a VR program was found to be more effective (Pedram et al., 2020). To date, most of the studies that have used VR and AR with actual patients regarded its utility in relation to cognitive behavioural therapy. Avatar therapy, in which the use of digital representations of the client (Tisseron, 2011) or clients, therapist, or in many cases the persecutory voices that the client experiences, are represented on a computer monitor or in using a virtual reality headset device, borrows many of its concepts from behavioural therapy (Leff et al., 2014; Falconer et al., 2017). Some literature has been published considering the possibility of art therapists incorporating VR and AR (Garner, 2017; Hacmun et al., 2018; Kaimal et al., 2020),

as well as other digital technology (Garner, 2017). Overall, little has been written regarding the vast possibilities currently available to the public that could be used by drama therapists and other creative arts therapists were they to adopt these technologies in their interventions. Further, using these technologies where the therapist and the client are distant from one another has not been commented upon, but will inevitably be utilized as our society has become more comfortable with distance learning, working, and socializing.

Sand Tray Therapy

Sand tray therapy was originally inspired by H. G. Wells' 1911 book, *Floor Games*, and developed for clinical use by a pediatrician in the 1930s (Weinrib, 2012), long before drama therapy had emerged as a separate discipline. The intervention involves allowing the client to create their own world or vignettes in the sand with several objects of their choice. This is in contrast to what is now referred to as sand play therapy, a form of play therapy that does not rely heavily on verbal skills. It uses a sandbox, miniatures and sometimes water.

In contrast to sand play, sand tray therapy is more therapist lead, and involves the therapist offering feedback to the client throughout the session. To date, sand tray therapies and assessments have been used with a myriad of populations, including children (Weinrib, 2012), adults (Doyle & Magor-Blatch, 2017), families (Isom et al., 2015), juveniles in correctional facilities (Parker & Cade, 2018), grieving youth (Roubenzadeh et al., 2012), older adults (Rogers et al., 2020), adults with developmental disabilities (Tanguay, 2009), youth on the autism spectrum (Lopez & Rubin, 2012) as well as college students making decisions regarding their career (Swank & Jahn, 2018). Sand tray assessments have also been used to evaluate resilience (Wang & Privitera, 2019) and have been noted as effective when working cross-culturally (Ramsey, 2014). In addition to being employed with many different populations, multiple

theoretical orientations can be used when interpreting this intervention, such as a spiritual orientation (Leighton, 2014), or a constructivist perspective (Dale & Lyddon, 2000).

Psychoanalytic and play therapy orientations have also been used with sand tray intervention, and over the years many different methods of facilitating and interpreting this intervention have been developed (Weinrib, 2012).

Thus, sand tray theory is a recognized therapy intervention that is effective with a broad cross-section of clients. It is interesting to note that the whole premise of sand tray theory, creativity within the confines of sand tray, have many similarities to imaginative games such as Dungeons and Dragons. It should be noted that sand tray intervention has been used with a variety of different approaches, for example, the Little World Assessment, in which the client creates a metaphorical representation of their world and their place in it, the holistic approach where the therapist must simply be present to reinforce security and creativity, the Adlerian model where the therapist offers suggestive lifestyle feedback, and others. The researcher has not, however, found any examples of sand tray therapy being conducted digitally, let alone with AR and VR.

Sand Tray vs Dungeons and Dragons

There are similarities between sand tray therapy and using Dungeons and Dragons therapeutically, for example sand tray therapy can be done using multiple theoretical orientations as could Dungeons and Dragons when employed in a therapeutic space. However, important differences must be considered. Generally speaking Dungeons and Dragons provides more of a co-created process in comparison to sand tray therapy. In terms of therapist involvement, Dungeons and Dragons can be seen as requiring more therapist involvement than sand tray therapy, which in turn has more therapist involvement than sand play therapy.

This greater level of co-creation could be especially useful for clients struggling with social skills and more specifically social scripts. This is due to the fact that the drama therapist has more opportunities to insert themselves into the dramatic action of the session and redirect the client's behaviour. The drama therapist must therefore be skilled in creating imagined situations that challenge the client in appropriate ways. It would also be useful for clients who are highly verbal or imaginative because it would provide them with a narrative in which they could invest themselves. Thus, sand play, sand tray, and Dungeons and Dragons could be seen as existing on a continuum in which sand play involves the least therapist intervention and Dungeons and Dragons involves the most. All of these types of interventions are important tools in the therapist toolbox. While sand play focuses on client expression, sand tray therapy and Dungeons and Dragons involves the therapist functioning as the psychological container for the therapeutic action to a greater degree. This means that the therapist is more directive towards the client in session and takes more responsibility in terms of guiding the client towards certain modes or frames of expression, establishing the boundaries in the created world.

Dungeons and Dragons relies on conflict and its resolution through confrontation or cooperation in a imaginative play space. In contrast, these social elements are not as concretely referenced in sand tray therapy. Conflict and its resolution can be of great importance in therapy for teenagers on the autism spectrum, even when this conflict is established by the therapist.

Perhaps most importantly for the purposes of this research, Dungeons and Dragons is already established as an activity that can be conducted online with relatively little adaptation. This is in contrast to sand tray therapy which has not, to the researcher's knowledge, been adapted for online spaces.

Research Methodology Design and Research Methods/ Materials

Intervention research is a multi-step process, of which only the first two stages – notification and development – are completed in this research project. These steps are traditionally followed by the assessment and dissemination phases (McBride, 2016). It is in the notification phase that ideas are fielded and gaps in literature are identified (Fraser, 2009). Initial program material is created during the development phase and is later tested and refined during the assessment and dissemination phase (McBride, 2016). Only the notification and the development phase were conducted in this research.

In the notification phase, the idea of using Dungeons and Dragons as a therapy to aid in the development of social skills for teens with autism spectrum disorder was proposed. This arose from the realisation that Dungeons and Dragons requires players to make social decisions and rely on conversational skills, an area of deficit for many individuals with autism spectrum disorder. Furthermore, the game can have a strong attraction to young people and provide a safe space to learn and practice these skills. In addition, the fact that Dungeons and Dragons can be played remotely with digital technology to further enhance the experience is of interest. The remote aspect has taken on an unprecedented level of importance during the present pandemic.

Generally, one would look most closely at the literature directly on point to create the program material. Since there is no literature directly on point, as discussed in the Literature Review section, comparisons have been drawn from analogous types of therapy, such as sand tray therapy.

In the development stage it is explained how a traditional Dungeons and Dragons game could be adapted as a therapeutic intervention for teens with autism spectrum disorder. For example, difficulties with abstract thinking might necessitate simplification of certain rules. This stage is

reflected in the intervention strategy, where there is a detailed description of how the therapist would carry out the intervention. The approach and interventions with this population, including some advice in terms of technical enhancements to the game played remotely are also discussed.

From these findings guidelines are suggested which will hopefully be useful for the creation of a manual which may be created by future researchers. Refining and testing of program material, as well as disseminating a finished product, could also be completed in future research. Program material will be created within this research, but will not be tested with participants, thus the assessment stage will not be carried out, although an imagined vignette is included in order to assist the reader in better understanding what a session might look like. This program material is represented in the Intervention Strategy section below.

Between 2007 and 2017, multiple approaches to intervention research have been employed by drama therapists. These include: role play, role theory, storytelling, story making, narradrama, development transformation, playback theater, theater of the oppressed, performance, drama therapy combined with other art therapies, and puppetry (Feniger-Schaal & Orkibi, 2019, p. 76). The intervention discussed in this paper was designed to incorporate elements from multiple modalities. Thus, the initial program material incorporating Dungeons and Dragons and digital technology could be assessed by later researchers based on their connections to other modes of drama therapy. The application of using Dungeons and Dragons as an intervention strategy using digital technology could look quite different depending on the therapist's background and expertise. This is an important strength of this intervention.

Intervention Strategy

The facilitation of an intervention strategy could be implemented using the following frameworks and technologies. Questions posed to the client featured below are not meant to be prescriptive but provide guidance as to the type of questions that could be asked at each stage of this intervention. During the game a combination of leading and open questions will be used, as appropriate, to advance the game and help determine the state of mind of the client, in much the same way as the six-part story interventions uses questions that keep within the frame of, and advance, the story (Lahad & Dent-Brow, 2012). Any of these questions could lead to further discussion and analysis that could be revisited during the debrief of each session. Sessions could be anywhere from one to two hours in length. Although the intervention strategy discussed in this paper is primarily designed for use with individual clients – i.e., one player – it should be remembered that the strategy can function with multiple clients. This is particularly true with rise of videoconferencing, where participants need not be in the same room or even in the same city. Below are some uses of digital technology that could potentially be incorporated throughout the process:

Videochat effects and background incorporation: Using the videochat effects and background such as masks and set dressing to facilitate immersion, role, and embodiment. This can aid clients in investing in the process, especially are those who are visual learners.

Virtual reality incorporation: Using virtual reality to facilitate immersion role and embodiment. For example, the client would wear a headset and be able to “see” the terrain where the game was being played.

Augmented reality incorporation: Using augmented reality to facilitate immersion role and embodiment. Here, the client would be able to see objects or creatures projected from the virtual space into the real world with the aid of a headset.

3D printer incorporation: Creation of a transitional object, such as a character model or a piece of the setting that can be played with. This would help the client identify with the character which could be important for certain individuals on the autism spectrum.

Digital 3D builder incorporation: Creating a character with the client's face and/or to the client's specifications. This would further build on the 3D printer idea above.

Powerpoint incorporation: Creating a setting for the client's character, such as a map or scene of their home or homeland. This could ground the client and assist in playing the game, especially if they have a hard time imagining scenarios.

Preparatory session

In preparation for the therapy session using Dungeons and Dragons, the therapist would discuss the nature of the game with the client. This could be done at a previous session with the client before the actual game has started. This would ensure that the drama therapist has enough time to discuss the basic framework of the game and give them sufficient time to plan the course of the game. The client could be queried on whether they are aware of, or played, Dungeons and Dragons before. If the client has not played the game, the drama therapist may need to be specific about the fantasy elements that can be used in the narrative. This will help encourage a mindset that allows for actions not available in the real world. Video games, stories and books could be discussed to start to get the client thinking about the game and determining what type of character they may wish to be. This is in contrast to a traditional session of Dungeons and Dragons in which the dungeon master would create the world in advance of the game and

independently of the other players and the players would only be able to create their characters. Ideally, the client will choose a character and perhaps even the outline of an adventure during this session which would aid the drama therapist planning both the nature of the game and the uses of technology, such as 3D models in advance of the beginning session. In light of the fact that there will only be two players, and the population that is targeted, the backstory and the character's "abilities" will by necessity be simpler. Similarly, rather than complex character sheets created by the players that involve multiple spells and are created at the beginning of the game, the character sheet could be co-created by the therapist and client and could evolve throughout the game.

Beginning Session

In this session, image and 3D object searches can be used to find representations of the character and setting that speak to the client. Although it is beyond the current technological capabilities of this researcher, AR and VR programs could also be used to render the characters and setting. If the client has an interest in drawing, they could be encouraged to illustrate their character. Note that these preparatory stages could also be done in advance of the beginning session.

Even without the above uses of technology the session could proceed at a distance through videochat, with the client and therapist working together to establish the character's story. Making the client's character sheet, a document representing everything known about the character, could also occur or be continued during this session with the use of some kind of digital character creation technology, like in avatar therapy. This and the following steps need not be complex as demonstrated in the imagined vignette at the end of this section.

Choosing/creating the character

Either in advance of, or at, the beginning session a fantasy character and its backstory would be created with the client. Depending upon the client's capabilities they may take more or less of a leading role in this process. During this process, the client may choose a model from a 3D library to act as a visual representation of the character, or alternatively aid in the building of said 3D model. To decrease dramatic distance, the 3D model can be made to have the client's face through the use of technology. If familiar with the game and functioning at a level that would permit, the client should also be encouraged to make a character sheet similar to the ones used in traditional Dungeons and Dragons games, telling the story, strengths, and weaknesses of the character.

Questions: If you were a character in a fantasy world who would you be?

- What does the character look like?
- Who or what is the character attached to?
- Does the character have any magical powers?

Choosing setting

Together, the therapist and client may choose a setting that relates to the character chosen by the client. Here, the therapist will work with the client, based on the client's choices of character to determine the appropriate fantasy settings, each accompanied by their own visual background for the character to choose from.

Questions: What kind of fantasy world does this character live in?

- Where is the character in this fantasy world?

Choosing how to play the game

This involves deciding how closely to follow the rules based on the client's needs and abilities. It is important to give the client as much choice as possible in relation to character,

setting and story line in order to increase their internal locus of control. This in turn will create more immersion and lead to potential insights during the debrief.

Based on the client's comfort or familiarity with the game, the therapist may well decide to play a modified version of the game that incorporates fewer dice rolls and formal rules. For example, for clients who find the game too confusing, dice rolls with the 20-sided die may be substituted with coin tosses. Furthermore, the rules governing what the client's character can and cannot do, and how much of that is represented on the client's character sheet, if they choose to make one, can be similarly adjusted. If the client is unfamiliar with Dungeons and Dragons but is familiar with other role-playing games, for example video games, rules and structure can be modified to increase the client's comfort level.

Questions: How familiar are you with Dungeons and Dragons?

- Are there other role-playing games that you have played?
- What do you think of when we talk about fantasy?

Introducing conflict

Once the character is created and the setting is decided, a conflict will be presented. As in the traditional Dungeons and Dragons game the dungeon master/therapist introduces conflicts in-game that the client can choose to have their character resolve, for example through diplomacy, magic or violence. In addition, the client may create a conflict and it will be up to the therapist to determine whether this will advance or impede the therapy process.

Questions: What is your character thinking at this point in the story?

- What does your character do?

Debrief

Sufficient time should be given at the end of every session to debrief regarding the session and any feelings it brought up. In addition, the debrief should cover any future goals the client may have both in and out of game. Non-interpretive, non-inferential or open questions should primarily be used during the debrief (Lahad & Dent-Brow, 2012). This is done to allow adequate reflection on the part of the client without the drama therapist consciously or unconsciously leading the discussion. This will also aid the drama therapist in deciding how future sessions should proceed.

Questions: How was the session for you?

- Did anything in the game stand out for you, and why?
- Is there anything in the game that makes you think of real-life events?
- What was it about the game that you liked or didn't like?

Middle Sessions

In these sessions the therapist attempts to stimulate growth of the client as the character the client began playing as in the first session also grows. This involves:

Expanding the character

Through improvisation, the client and therapist will discover what drives the client's character and what affords the character opportunities to grow and change in power and appearance, that hopefully reflect the client's personal growth.

Questions: Where did we leave the character?

- What does the character look like now?
- Has the character changed mentally or physically?

Expanding the setting

This involves expanding the setting to afford the client a chance to deepen their connection and view of the imagined world. Once again, this should be done in a way meant to dramatically reflect the client's expanding world and their real-life struggles. The client should be offered some choice where in the expanded imagined world they wish for their character to venture.

Questions: Where is your character in the setting?

- Where has your character been?
- Where does your character want to go?

Negotiating conflict

New conflicts may be introduced at this point. These conflicts can directly relate to the previous conflicts the client's character has had – for example, meeting the brother of a character that the client's character had bested in combat and/or killed – or may reflect problems the client has encountered in real life. Through this process that drama therapist should be encouraging or affording the client opportunities to react to conflict differently.

Questions: What is your character thinking at this point in the story?

- What does your character do?

Debrief

Sufficient time should be given at the end of every session to debrief regarding the session and any feelings it brought up, with the debrief covering any future goals the client may have both in and out of game. In the following debrief, it is assumed that the client used magic in this session.

Questions: When you used magic how did that feel?

- Would you like to have magic powers in real life?

- How would you use them?
- Is there any way you want to change the game for next session?

Closing Session

It will likely be predetermined that the game will have a set number of sessions. The ending session is the session in which the story created throughout the therapy process is either resolved or abandoned. At this point some kind of through line should have developed across sessions in the journey of the character created or chosen by the client. Resolving this through line and creating or finding a final version of the character the client is playing as should be the focus of the gaming portion of this session. Before the last session the following may occur.

Creating a final version of the character

The character will likely have evolved throughout the sessions. Creating the final version could involve creating a final character sheet for the client, creating a final 3D model for the client, printing the 3D model, and/or painting said 3D model. This model could then be taken home as a transitional object for the client.

Questions: Where did we leave the character?

- What does the character look like now?
- Has the character changed mentally or physically?

Simplifying the setting

At this stage in the process the client should be given extra liberty to focus on aspects of the setting that bring them joy.

Questions: Where is your character in the setting?

- Where has your character been?
- Where does your character want to go?

Resolving imagined conflict

Allowing the client to resolve imagined conflict or to ignore conflicts they do not wish to participate in should be a focus in the final sessions.

Questions: What is your character thinking at this point in the story?

- What does your character do?

Final Debrief

The final debrief may be longer and resemble more traditional therapy. Clients should be encouraged to reflect on the process and their growth during therapy at this point, as well as personal goals for the future.

Questions: How did it feel to play the game?

Did anything in the game stand out for you, and why?

- Is there anything in the game that makes you think of real-life events?
- How has your character changed throughout the process?
- What do you think you have in common with your character?

The drama therapist and client continue to discuss how the game could be related to real-life and what the client may have learned as a result of therapy.

Imagined vignette

A male 16-year-old client enters a chat room with the drama therapist. He has been diagnosed with autism spectrum disorder and has been experiencing social issues at school, due to his difficulty forming relationships. He has been referred by an autism support group. He is also being bullied by other boys in his grade. The following exchange could take place at a preparatory session, or at the first game session.

Drama therapist: In this virtual space we're going to play Dungeons and Dragons. Have you ever heard of the game?

Client: No.

Drama therapist: Dungeons and Dragons is a game you play in your head with other people. We're going to tell a story together that takes place in a fantasy world.

Client: Okay.

Drama therapist: Do you know what I mean by a fantasy world?

Client: Not really.

Drama therapist: Have you ever seen a movie or read a book where there are knights and dragons?

Client: I've played Skyrim.

Drama therapist: Exactly! That's the type of world we're going to pretend to be in. If you could be anyone in a fantasy world who would you be?

Client: I don't know.

Drama therapist: You have options, for example, you could be a fighter, a wizard, a rogue, a cleric, or a monk.

Client: What's a cleric?

Drama therapist: A cleric is like a priest.

Client: I think I'll be a wizard. Is this like playing video games?

Drama therapist: Kind of, but instead of a gaming system we're going to have to use our imagination.

Client: Okay.

The therapist recognizes that client has little knowledge of the fantasy genre. Showing pictures, perhaps from covers of classic fantasy novels, may give the client visual reference points for the world in which the game will take place.

Drama therapist: (sharing 3D models of multiple wizards) What does your wizard look like?

Does it look like any of these?

Client: That one, without the beard.

The drama therapist loads the model on to the shared screen.

Drama therapist: What's the wizard's name?

Client: I don't know.

Drama therapist: Pick one.

Client: Joshua.

The exchange above could take place in the latter part of a previous session in order to prepare for the Dungeons and Dragons session. As this is a therapeutic intervention rather than a game played purely for enjoyment, it is important that the therapist carefully choose the conflicts that the client will experience, particularly at the beginning. These may be chosen to reflect problems that the client is having in real life. Thus, a pre-therapy assessment could be useful to pinpoint which issues of the client should be addressed.

Drama therapist: Where is Joshua the wizard?

Client: I don't know.

Drama therapist: Is he at home or on a quest?

Client: On a quest.

Drama therapist: What do you think he might be looking for?

Client: French fries. I like French fries.

Drama therapist: Has Joshua ever had French fries before?

Client: Yes, he likes them.

Drama therapist: Where does he like to get French fries?

Client: At a restaurant?

Drama therapist: Does he have a favourite restaurant?

Client: Yes.

Drama therapist: What does this restaurant look like?

Client: Denny's.

The drama therapist loads a picture of Denny's behind the model of the wizard. The drama therapist also loads a model of a waitress.

Drama therapist: The waitress comes over and says, "Hello, I haven't seen you in a while?"

Client: Joshua orders French fries.

Drama therapist: What does he say when ordering the French fries?

Client: Can I have some French fries please?

Drama therapist: The waitress says, "Unfortunately our deep fryer got stolen by a rock golem last night. So, we can't make any French fries."

Client: That's bad, that's really bad.

Drama therapist: If only someone could investigate for us. Would you be willing to do that?

Client: Okay.

Drama therapist: Roll a 20-sided die to make an investigation check.

The therapist can coach the client to access an online dice roller, telling them to google "roll d20". The therapist may also substitute this dice roll for a coin toss if the client seems too overwhelmed and introduce the 20-sided die in a later session. Depending on the results of the

dice roll or coin toss the therapist can either tell the client their character found a trail of oil or their character did not find anything at all during their investigation. If the latter occurs, other options for finding the deep-fryer must be considered, like interviewing the staff or using magic.

Client: Can I use a spell to find the deep-fryer?

Drama therapist: Do you have a locate object **spell**?

The client uses a locate object spell to discover the direction and distance of the deep-fryer. On the way to retrieve the deep-fryer the client's character bumps into someone, or nearly bumps into someone, inciting a conflict. The client then must determine how his character deals with this conflict.

Drama therapist: (in character) Hey! Watch where you're going!

Client: I'm sorry.

Drama therapist: You made me spill my drink! You owe me a five gold pieces wizard.

Client: Do I have five gold pieces?

Drama therapist: Yes, are you going to give it to him?

Client: How much gold do I have?

Drama therapist: Let's say you have ten gold pieces.

Client: Ok, I guess I have to pay him then.

Drama therapist: What does Joshua say as he hands him the money?

Client: Here you go.

Drama therapist: How does Joshua feel as he hands him the money.

Client: Angry.

Drama therapist: Does he want to look angry.

Client: No.

Drama therapist: Roll a 20-sided die to make a deception check.

Here if the client rolls a high number, closer to 20, the drama therapist may ask what a good deception would look like, whereas if he rolls low, closer to 1, the drama therapist may ask the client what a bad deception looks like.

Admittedly, this vignette represents only a small part of an imagined therapy session. As a first session, much of what is being done is setting the stage for future sessions and gaining the client's trust. Future sessions may be more intense and have more dramatic material that relates to the client's life and can be of assistance in therapy. Starting slowly, during the debrief of this session, the therapist may ask about the significance of the name "Joshua", or why he chose such a realistic setting when other more fantastical settings were possible. The drama therapist will have recognised the significance of client's response to conflict: giving in to the aggressor's demands and making the decision to not show the anger he feels. Knowing that being bullied has been an issue for the client, the drama therapist might then discuss how the conflicts could have been resolved differently with the client. For example, regarding the conflict surrounding the spilled drink the drama therapist might suggest next time trying to use diplomacy through "a charisma check" to resolve the conflict or make an ally of the other party.

Discussion

One of the significant strengths of this intervention is its adaptability. The intervention could be easily adapted for the varying levels of focus adolescents with autism spectrum disorder can experience. The manner in which the rules could be changed to meet the intellectual and emotional needs of a given client makes it ideal for a population with as wide a range of issues as adolescents with autism. As has been stated, various adaptations to the traditional Dungeons and Dragons game can be made to best serve the needs of the client.

Adaptations may include:

Simplifying the dice - This may be necessary for a client who becomes anxious when presented with too many options, given that the traditional Dungeons and Dragons die is 20 sided, or a client who has trouble understanding how the system of rolling dice affects the game.

Making the character sheets for the player while playing, instead of in advance - In a traditional game, this is done when a character is added to the story. In this case it could happen when the therapist wants to create a character in response to the immediate needs of the client, or when the therapist wants to change the client's character traits for similar reasons.

Allowing the player to initiate conflict – In a normal game of Dungeons and Dragons, conflict is created by the dungeon master. Here, the therapist may feel it is beneficial for the client to create conflicts which can be added to the overall story.

Questions regarding the length of time this intervention will take have yet to be explored. The ideal number of sessions for an individual subject will vary according to a number of metrics. Different considerations would have to be taken into account were this intervention conducted in a group setting, in which each subject would have their own challenges and needs.

Using Dungeons and Dragons as an intervention has its advantages and disadvantages. An advantage is that it can be related to much of traditional drama therapy and the structure of the intervention offers a co-created ritual that can be easily repeated or modified. The major difference between this intervention strategy and traditional drama therapy is the role the drama therapist takes in directing the action throughout the session. In many traditional drama therapy interventions, the therapist will follow the client's lead as to the conflicts explored in the session. In this intervention the therapist is required to direct the action of the session throughout and insert conflict based on their perception of the client's needs much like the director in psychodrama. A difference between many drama therapy interventions and the intervention strategy proposed in this research is that the drama therapist works very closely with the client and is more directive in terms of the options available to the client within the game. In effect, the therapist aids the client in constructing an imaginary world and then processes it with the client. The therapist acts as a guide, a deep empathic listener, and a facilitator of distance and catharsis. This is similar to the roles the therapist takes in developmental transformation (Johnson, 2009).

Familiarity with Dungeons and Dragons and the prominence of the game in the cultural milieu would hopefully afford the client opportunities to play the game with peers outside of the therapeutic milieu at some point following the therapy, as well as applying newly learned skills in their daily lives, for example conflict resolution, outside of therapy. The tangible connection to something larger than oneself, in this case, Dungeons and Dragons, can allow for a feeling of connection that is psychologically healing (Snow, 2009). These experiences are also thought to foster neurological connection (Cozolino, 2010; Frydman; 2016, Jaynes, 2000; Panksepp, 2014).

Digital technology could be incorporated to titrate the distance of this imagined world. For example, allowing the client to have the perspective of the character they are playing might be

facilitated by VR or AR technology. The use of VR technology can be thought to be less distanced than using Powerpoint, but more distanced than the use of AR technology. Practically speaking, camera filters that incorporate AR technology can be used to give the client a virtual mask that talks and blinks in time with them. They can furthermore be used to load backgrounds that would immerse the client in their virtual world. This could also facilitate embodiment when playing Dungeons and Dragons through a virtual medium. Finally, the use of 3D printers could be incorporated to create figurines of the client's character. This could act as a transitional object for the client and facilitate dramatic projection. A major issue with this intervention strategy and the use of digital technology to facilitate it, is that the technological literacy of the client or therapist may be such that only one type of digital technology may be used for the client within a session or across sessions. Further experimentation and development would be necessary to create a single interface or playspace where all these technologies are easily accessible to the drama therapist and client. Clearly, use of this strategy could evolve over time with the introduction and availability of new technologies.

Drama therapists have a plethora of options in terms of how to assess clients during a game of Dungeons and Dragons. For example, a drama therapist might divide the session in to six parts and use a six-part story assessment method such as the BASICPh (Lahad, 1992) or one of the other seven levels of assessment. In other words, the drama therapist could divide the story into six parts and analyze it through a series of lenses, such as coping style, themes, here and now questions and so on (Lahad & Dent-Brow, 2012). This could be done for the elements created by the client or created by the therapist but most strongly reacted to by the client.

Sand tray assessment methods could also be used, especially following the first session in which the world is built from the client's imagination. Assessment methods such as the little

world assessment could be used, perhaps with modifications. Here the drama therapist would identify the themes and significant representations made by the client during the game.

In terms of roleplay, this intervention affords the client several opportunities with each session to expand what is referred to as their role repertoire (Landy, 2009) as they deepen their connection with their character. Through roleplay, the client would be offered the opportunity to choose an archetype they identify with. Thus, drama therapists working from a role theory perspective should be comfortable implementing this intervention.

On the subject of play, Dungeons and Dragons offers the opportunity for the client to express and play with emotions that are potentially too activating to remain within the client's window of tolerance, were they expressed within a normal therapeutic setting or the real world. It is worthy to note that play is deemed one of the seven neuroaffective networks we share along with all mammals, as well as some birds and reptiles (Panskepp, 2014). The importance of play can not be understated as it relates to this intervention strategy. It is in the playing with projected archetypes that we are thought to be able to commune effectively with our subconscious (Jaynes, 2000). For play to function there needs to be a sense of possibility. Notwithstanding the fact that there are rules in Dungeons and Dragons, the possibilities are only limited by one's imagination. Indeed, even the rules can be changed to allow greater imagination and play. Such factors will depend on the client and therapist's comfort with the game.

For benefits to flow from the game, there needs to be a relationship of trust between the dungeon master/game leader and the client or clients. The game offers the opportunity to practice communication skills, as well as teamwork and collaboration. It is now often also played online via text chat, and more recently through virtual gatherings. Using this game as an intervention with adolescents with learning disabilities demonstrated to the author its effectiveness in building

social skills. Informal experimentation with friends and colleagues showed that the game could be made more immersive through the incorporation of digital 3D models and PowerPoint, even over videochat. More and more digital technology is being used with this population (Gokaydin et al., 2020). Thus, there is some evidence that Dungeons and Dragons could effectively be used as a psychological intervention with adolescents, and that it is an activity that could be mediated by technology.

The mode with which the drama therapist decides to implement the intervention could be subject to considerable change based on their training and comfort with the game. For example, if the drama therapist is more comfortable with narradrama they may focus on the story elements of this intervention strategy and less on the mechanical rules. A drama therapist concerned more with role might focus on giving the client more opportunities to embody their character over playing the game by the rules. A drama therapist more concerned with ritual might decide to play the game using all the rules to create a ritual that widens the client's window of tolerance. Traditionally, a game of Dungeons and Dragons involves a great deal of preparation. Character sheets, being complex documents that represent the characters' strengths, weaknesses, and inventory, can take considerable time to make. Allowing the client to choose whether to make a character sheet or simply choose a pre-made character can give the client a sense of control. Playing Dungeons and Dragons affords clients the opportunity to have control taken away from and given back to them, ultimately widening their window of tolerance, or the level of discomfort that they can tolerate.

Depending on the client, the seriousness of their issues, the rigidity of rules with which the therapist chooses to implement the game, and the access to technology the therapist has, the session could unfold in several ways. Certain clients may find comfort in the rigidity of the rules

and may be challenged when the rules are changed from the official guidelines. Other clients may need the rules to be simplified or their options reduced before they are able to make a choice. The incorporation of digital technology adds another layer to the game making it a shared visual experience and more profound playspace.

A salient advantage of this intervention strategy is that it can be implemented at a distance. It is not uncommon for Dungeons and Dragons to be played over text and videochat. The uses of technology suggested in this paper could all be implemented with social distancing in mind. As a result, drama therapists may be able to interact with their client through the mediation of technology to implement this intervention strategy.

Dungeons and Dragons is usually played in a group setting and the therapy could easily be adapted for multiple clients to work together in-game. This would add another dimension of cooperation between clients, facilitated by the drama therapist. This would be important for practicing social skills among these clients, as learning to support each other in the game or the playspace would afford them the opportunity to build these social skills. When videochat format is used the players need not be in the same place, making it easier for clients to come together. Working collaboratively and expressing oneself with other group members can also be helpful for this population in a number of ways (D'Amico et al., 2015).

A group setting might be used for more highly functioning individuals who need to be challenged to a greater degree when it comes to peer interaction. It could also be used for individuals who have had extensive individual therapy and would benefit from more complex interactions. At a certain point it might also be possible for a group to continue playing Dungeons and Dragons remotely, without the aid of the drama therapist, providing continued peer interaction.

Leading a game for a group would require more preparation and attention to detail from the drama therapist, as the rules could not be made as flexible as when working with an individual client. Here the drama therapist would have to take extra care to make sure the game seems fair and balanced for all players/clients and that each one gets a moment to showcase their character and its abilities. Some clients may not be comfortable with digital technology, which is a potential limitation. Furthermore, if the subject already has difficulty reading body language and social cues working remotely over video may not be ideal.

Further research

As indicated, the design and implementation discussed in this research paper is largely theoretical and anecdotal. It is recommended that different research methodologies be used to determine the utility of using Dungeons and Dragons remotely and further explore the use of technology for the target group discussed herein, adolescents on the autism spectrum, as well as other populations. This could be done in a number of ways. For example, pre- and post-standardized tests such as Social Skills Improvement System-Rating Scales (SSIS-RS) could be used to determine progress in social interactions (D'Amico et al., 2015). Skills associated with SSIS-RS could also be intentionally incorporated into Dungeon and Dragons sessions to assist with the evaluation (D'Amico et al., 2015).

If further research is positive, different aspects of the therapy could be more closely examined. For example, there could be further focus on the use of digital technology to determine if that aspect of the therapy sessions assisted clients, either in desire to participate or invest and even have improved outcomes.

As Dungeons and Dragons is more frequently used as an therapeutic intervention, it will be useful to manualize the process for greater standardization and provide more reliability and

validity for the intervention. A note of caution, however, is that one of the greatest strengths of this intervention is its flexibility. The variety of stories, the fact that it can be used with one client or a group, and the use of various types of digital technology mean that any manual should not be prescriptive but should allow for many modalities. Thus, it is the researcher's view that the ideal manual would deal with process, while leaving content up to the drama therapist.

Conclusion

Based on the above research it would seem that a case can be made for a triangulation of Dungeons and Dragons, drama therapy, and autism spectrum disorder. The connections between drama therapy and Dungeons and Dragons have been discussed in the Introduction and the Discussion sections of this paper. There is sufficient literature to support the use of drama therapy in treating patients with autism spectrum disorder. Throughout this paper it has been proposed that Dungeons and Dragons can be useful as a drama therapy intervention.

To begin, games have the capacity to create a safe space. Furthermore, playing Dungeons and Dragons can create an accessibility point for clients who may be able to expand their social circle through the game. Dungeons and Dragons as an intervention builds upon other interventions that are established and effective, such as sand tray therapy, and thus it will be accessible to therapists of various schools. Dungeons and Dragons is also uniquely suited to be a distanced intervention, in a time when distanced interventions are necessary and likely to stay. This is especially the case with the incorporation of digital technology, which allows for more dramatic distancing than traditional in-person therapy. On one level, this is because there is a screen between the therapist and client, or the client and the action. As well, distancing is automatically created when the therapist and client may not be inhabiting the same physical space. Since individuals with autism are often prone to sensory overload, the amount of distance needs to be titrated to keep the client within their window of tolerance. Ritual and play are necessary to maintain this window of tolerance. The use of Dungeons and Dragons can serve to balance the distancing aspects with the ritual and play necessary for the game. This can serve to bolster the connection between therapist and client.

High functioning teens on the autism spectrum who are in therapy to improve their social and communicative skills can benefit from a therapist using Dungeons and Dragons as a tool for a number of reasons. It is important to recognize that each person on the spectrum is different and will have different challenges so one should be wary of prescriptive instructions in such therapy. Individuals on the autism spectrum may have issues with formal or organized thinking – for example, verbal processing (Solomon et al., 2008). Dungeons and Dragons can offer an opportunity to practice verbal and nonverbal processing. Through the therapist’s coaching, the clients can be given the opportunity to make choices and express themselves in a variety of other ways. For example, within the game one inevitably must negotiate conflict, change plans and deal with disappointment. All of these may be challenges for teenagers on the autism spectrum. Practicing them in a controlled setting and discussing their feelings with the drama therapist, either during the game or in the debrief can provide them with insights that they can use in their daily lives.

Further experience and study using Dungeons and Dragons as a distanced therapy with various technologies will establish how and when this intervention is useful with teenagers who are on the autism spectrum and with other populations. Focused studies where progress is measured and manualized will provide further insight as to when, where and how such interventions should be used. Finally, it is this author’s hope that this strategy will help teenagers on the autism spectrum learn how to better navigate their world.

References

- Adams, A. S. (2013). Needs met through role-playing games: A fantasy theme analysis of Dungeons & Dragons. *Kaleidoscope: A Graduate Journal of Qualitative Communication Research, 12*, 69–86.
<https://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1169&context=kaleidoscope>
- American Psychiatric Association. (2018, August). *What is autism spectrum disorder?*
<https://www.psychiatry.org/patients-families/autism/what-is-autism-spectrum-disorder>
- Armstrong, C. R., Rozenberg, M., Powell, M. A., Honce, J., Bronstein, L., Gingras, G., & Han, E. (2016). A step toward empirical evidence: Operationalizing and uncovering drama therapy change processes. *The Arts in Psychotherapy, 49*, 27–33.
<https://doi.org/10.1016/j.aip.2016.05.007>
- Axline, V. (1964). *Dibs in search of self*. The Random House Publishing Group.
- Ben-Ezra, M., Lis, E., Błachnio, A., Ring, L., Lavenda, O., & Mahat-Shamir, M. (2018). Social workers' perceptions of the association between role playing games and psychopathology. *The Psychiatric Quarterly, 89*(1), 213–218. <https://doi.org/10.1007/s11126-017-9526-7>
- Blackmon, W. D. (1994). Dungeons and Dragons: The use of a fantasy game in the psychotherapeutic treatment of a young adult. *American Journal of Psychotherapy, 48*(4), 624–632. <https://doi.org/10.1176/appi.psychotherapy.1994.48.4.624>
- Brown, S., & Eberle, M. (2018). A closer look at play. In T. Marks-Tarlow, M. F. Solomon, & D. J. Siegel (Eds.). *Play and creativity in psychotherapy* (pp. 21-38). W. W. Norton & Company.
- Bruscia, K. (1988). Standards for clinical assessment in the creative arts therapies. *The Arts in Psychotherapy, 15*, 5-10. [https://doi.org/10.1016/0197-4556\(88\)90047-0](https://doi.org/10.1016/0197-4556(88)90047-0)

- Botella, C., Quero, S., Lasso De La Vega, N., Baños, R., Guillén, V., Garcia-Palacios, A., & Castilla, D. (2006). Clinical issues in the application of virtual reality to treatment of PTSD. *Novel Approaches to the Diagnosis & Treatment of Posttraumatic Stress Disorder*, 6(1), 183–195.
- Caplan, K. (2006). *Drama therapy: A possible intervention for children with autism* (Master's thesis). Concordia University.
- Cozolino, L. (2010). *The neuroscience of psychotherapy: Healing the social brain* (2nd ed.). W. W. Norton.
- Dale, M. A., & Lyddon, W. J. (2000). Sandplay: A constructivist strategy for assessment and change. *Journal of Constructivist Psychology*, 13(2), 135.
<https://doi.org/10.1080/107205300265928>
- D'Amico, M., Lalonde, C., & Snow, S. (2015). Evaluating the efficacy of drama therapy in teaching social skills to children with autism spectrum disorders. *Drama Therapy Review*, 1(1), 21–39. https://doi.org/10.1386/dtr.1.1.21_1
- Dellazizzo, L., Percie du Sert, O., Phraxayavong, K., Potvin, S., O'Connor, K., & Dumais, A. (2018). Exploration of the dialogue components in avatar therapy for schizophrenia patients with refractory auditory hallucinations: A content analysis. *Clinical Psychology & Psychotherapy*, 25(6), 878–885. <https://doi.org/10.1002/cpp.2322>
- Difede, J., Cukor, J., Jayasinghe, N., & Hoffman, H. (2006). Developing a virtual reality treatment protocol for posttraumatic stress disorder following the world trade center attack. *Novel Approaches to the Diagnosis & Treatment of Posttraumatic Stress Disorder*, 6(1), 219–234.
- Doyle, K., & Magor-Blatch, L. E. (2017). “Even adults need to play”: Sandplay therapy with an

- adult survivor of childhood abuse. *International Journal of Play Therapy*, 26(1), 12–22. <https://doi.org/10.1037/pla0000042>
- Dunne, P. (2009). Narradrama: A narrative approach to drama therapy. In D. R. Johnson & R. Emunah (Eds.), *Current approaches in drama therapy* (2nd ed., pp. 172–204). Charles C Thomas, Publisher.
- Falconer, C. J., Cutting, P., Davies, E. B., Hollis, C., Stallard, P., & Moran, P. (2017). Adjunctive avatar therapy for mentalization-based treatment of borderline personality disorder: A mixed-methods feasibility study. *Evidence Based Mental Health*, 20(4), 123–127. <https://doi.org/10.1136/eb-2017-102761>
- Faras, H., Al Ateeqi, N., & Tidmarsh, L. (2010). Autism spectrum disorders. *Annals of Saudi medicine*, 30(4), 295–300. <https://doi.org/10.4103/0256-4947.65261>
- Feniger-Schaal, R., & Orkibi, H. (2019). Integrative systematic review of drama therapy intervention research. *Psychology of Aesthetics, Creativity, and the Arts*. <https://doi.org/10.1037/aca0000257>
- France, E. F., Cunningham, M., Ring, N., Uny, I., Duncan, E. A., Jepson, R. G., & Noyes, J. (2019). Improving reporting of meta-ethnography: The eMERGe reporting guidance. *Journal of Advanced Nursing*, 1–14. <https://doi.org/10.1111/jan.13809>
- Fraser, M. W. (2009). *Intervention research: developing social programs*. Oxford University Press.
- Freeman, D., Lister, R., Waite, F., Yu, L.-M., Slater, M., Dunn, G., & Clark, D. (2019). Automated psychological therapy using virtual reality for patients with persecutory delusions: Study protocol for a single-blind parallel-group randomised controlled trial (THRIVE). *TRIALS*, 20, (87). <https://doi.org/10.1186/s13063-019-3198-6>

- Freeman, D., Yu, L.-M., Kabir, T., Martin, J., Craven, M., Leal, J., Lambe, S., Brown, S., Morrison, A., Chapman, K., Dudley, R., O'Regan, E., Rovira, A., Goodsell, A., Rosebrock, L., Bergin, A., Cryer, T. L., Robotham, D., Andleeb, H., & Waite, F. (2019). Automated virtual reality cognitive therapy for patients with psychosis: Study protocol for a single-blind parallel group randomised controlled trial (gameChange). *BMJ OPEN*, 9(8).
<https://doi.org/10.1136/bmjopen-2019-031606>
- Frydman, J. S. (2016). Role theory and executive functioning: Constructing cooperative paradigms of drama therapy and cognitive neuropsychology. *The Arts in Psychotherapy*, 47, 41-47. <https://doi.org/10.1016/j.aip.2015.11.003>
- Gallo-Lopez, L., & Rubin, L. C. (2012). *Play-based interventions for children and adolescents with autism spectrum disorders*. Routledge.
- Game to Grow. (n.d.). *History*. <https://gametogrow.org/about/history/>
- Gopnik, A., Syme, R., & Wright, R. (2020, June 1). *The new theatrics of remote therapy*. <https://www.newyorker.com/magazine/2020/06/01/the-new-theatrics-of-remote-therapy>
- Gordon, M. S., Carswell, S. B., Schadegg, M., Mangen, K., Merkel, K., Tangires, S., & Vocci, F. J. (2017). Avatar-assisted therapy: A proof-of-concept pilot study of a novel technology-based intervention to treat substance use disorders. *American Journal of Drug & Alcohol Abuse*, 43(5), 518–524.
- Gokaydin, B., Filippova, A. V., Sudakova, N. E., Sadovaya, V. V., Kochova, I. V., & Babieva,

- N. S. (2020). Technology-supported models for individuals with autism spectrum disorder. *International Journal of Emerging Technologies in Learning*, 15(23), 74–84.
<https://doi.org/10.3991/ijet.v15i23.18791>
- Hacmun, I., Regev, D., & Salomon, R. (2018). The principles of art therapy in virtual reality. *Frontiers in Psychology*, 1.
- Hilty, D. M., Randhawa, K., Maheu, M. M., McKean, A. J. S., Pantera, R., Mishkind, M. C., & Rizzo, A. “Skip.” (2020). A review of telepresence, virtual reality, and augmented reality applied to clinical care. *Journal of Technology in Behavioral Science*, 5(2), 178.
- Inozu, M., Celikcan, U., Akin, B., & Cicek, N. M. (2020). The use of virtual reality exposure for reducing contamination fear and disgust: Can be an effective alternative exposure technique to in vivo? *Journal of Obsessive-Compulsive and Related Disorders*, 25.
<https://doi.org/10.1016/j.jocrd.2020.100518>
- Isom, E. E., Groves-Radomski, J., & McConahan?, M. M. (2015). Sandtray therapy: A familial approach to healing through imagination. *Journal of Creativity in Mental Health*, 10(3), 339–350. <https://doi.org/10.1080/15401383.2014.983254>
- Jaynes, J. (2000). *The origin of consciousness in the breakdown of the bicameral mind*. Houghton Mifflin.
- Jones, P. (2007). *Drama as therapy. Theory, practice, and research*. Routledge.
- Jongsma, A. E., Peterson, L. M., & McInnis, W. P. (2006). *The child psychotherapy treatment planner*. J. Wiley.
- Johnson, D. R. (2009). Developmental transformation: Towards the body as presence. In D. R. Johnson & R. Emunah (Eds.), *Current approaches in drama therapy* (2nd ed., pp. 172–204). Charles C. Thomas, Publisher.

- Johnson, D. R., Pendzik, S., & Snow, S. (2012). *Assessment in drama therapy*. Charles C. Thomas.
- Josman, N., Garcia-Palacios, A., Reisberg, A., Somer, E., Weiss, P. L. (Tamar), & Hoffman, H. (2006). Virtual reality in the treatment of survivors of terrorism in Israel. *Novel Approaches to the Diagnosis & Treatment of Posttraumatic Stress Disorder*, 6(1), 196–204.
- Kaimal, G., Carroll-Haskins, K., Berberian, M., Dougherty, A., Carlton, N., & Ramakrishnan, A. (2020). Virtual reality in art therapy: A pilot qualitative study of the novel medium and implications for practice. *Art Therapy: Journal of the American Art Therapy Association*, 37(1), 16–24.
- Kim, S., & Kim, E. (2020). The use of virtual reality in psychiatry: A review. *Journal of the Korean Academy of Child & Adolescent Psychiatry*, 31(1), 26.
- Koller, M., Schafer, P., Lochner, D., & Meixner, G. (10-13 June 2019). *Rich interactions in virtual reality exposure therapy: A pilot-study evaluating a system for presentation training* 2019 IEEE International Conference on Healthcare Informatics (ICHI), Xi'an, China. <https://doi.org/10.1109/ICHI.2019.8904768>
- Lahad, M. (1992). Story-making in assessment method for coping with stress: Six-piece story making and BASIC Ph. In Jennings, S. (Ed.), *Dramatherapy: Theory and Practice 2* (pp. 150-163). Tavistorck/Routledge.
- Lahad, M., & Dent-Brown, K. (2012). Six-piece story-making revisited: The seven levels of assessment and the clinical assessment. In D. R. Johnson, S. Pendzik, & S. Snow, (Eds.), *Assessment in drama therapy* (pp. 121-147). Thomas, C. T.
- Landy, R. J. (1983). The use of distancing in drama therapy. *The Arts in Psychotherapy*, 10(3), 175-185. [https://doi.org/10.1016/0197-4556\(83\)90006-0](https://doi.org/10.1016/0197-4556(83)90006-0)

- Landy, R. (2009). Role theory and role method of drama therapy. In D. R. Johnson, & R. Emunah, (Eds.). *Current approaches in drama therapy* (2nd ed., pp. 65-88). Charles C. Thomas, Publisher.
- Lee, I.-J. (2019). Augmented reality coloring book: An interactive strategy for teaching children with autism to focus on specific nonverbal social cues to promote their social skills. *Interaction Studies*, 20(2), 256–274. <https://doi.org/10.1075/is.18004.lee>
- Leff, J., Williams, G., Huckvale, M., Arbuthnot, M., & Leff, A. P. (2014). Avatar therapy for persecutory auditory hallucinations: What is it and how does it work?. *Psychosis*, 6(2), 166-176. <http://doi.org/10.1080/17522439.2013.773457>
- Leighton, T. (2014). Spiritus contra spiritum: the body addiction and body religion in sandplay therapy. *Counseling et Spiritualité*, 33(1), 135–154. <https://doi.org/10.2143/CS.33.1.3044834>
- Lis, E., Chiniara, C., Biskin, R., & Montoro, R. (2015). Psychiatrists' perceptions of role-playing games. *Psychiatric Quarterly*, 86(3), 381–384. <https://doi.org/10.1007/s11126-015-9339-5>
- Lubetsky, M. J., Handen, B. L., & McGonigle, J. J. (2011). *Autism spectrum disorder*. Oxford University Press.
- Marks-Tarlow, T., Solomon, M. F., & Siegel, D. J. (2018). *Play and creativity in psychotherapy*. W.W. Norton & Company.
- McBride, N. (2016). *Intervention research: A practical guide for developing evidence-based school prevention programmes*. Springer. <https://doi.org/10.1007/978-981-10-1011-8>
- McCrimmon, A. W., Altomare, A. A., Smith, A. D., Jitlina, K., Matchullis, R. L., & Sakofske,

- D. H. (2014). Overview of autism spectrum disorder. In L. A. Wilkinson (Ed.). *Autism spectrum disorder in children and adolescents: Evidence-based assessment and intervention in schools* (pp. 17–36). American Psychological Association. <https://doi-org.lib-ezproxy.concordia.ca/10.1037/14338-002>
- Miragall, M., Baños, R. M., Cebolla, A., & Botella, C. (2015). Working alliance inventory applied to virtual and augmented reality (WAI-VAR): psychometrics and therapeutic outcomes. *Frontiers in Psychology, 6*, 1.
- Panksepp, J. (2014). *Affective neuroscience: The foundations of human and animal emotions*.
- Parker, M. M., & Cade, R. (2018). Using sand tray therapy with juveniles in correctional settings. *Journal of Addictions & Offender Counseling, 39*(2), 78–88.
<https://doi.org/10.1002/jaoc.12048>
- Patrão, B., Menezes, P., & Gonçalves, N. (2020). Augmented shared spaces: An application for exposure psychotherapy. *International Journal of Online & Biomedical Engineering, 16*(4), 43–50. <https://doi.org/10.3991/ijoe.v16i04.11876>
- Pedram, S., Palmisano, S., Perez, P., Mursic, R., & Farrelly, M. (2020). Examining the potential of virtual reality to deliver remote rehabilitation. *Computers in Human Behavior, 105*.
<https://doi.org/10.1016/j.chb.2019.106223>
- Perry, B., & Szalavitz, M. (2006). *The boy who was raised as a dog and other stories from a psychiatrist's notebook*. Basic Books.
- Popovic, S., Slamic, M., & Cosic, K. (2006). Scenario self-adaptation in virtual reality exposure therapy for posttraumatic stress disorder. *Novel Approaches to the Diagnosis & Treatment of Posttraumatic Stress Disorder, 6*(1), 135–147.
- Raghuraman, R. S. (2000). Dungeons and dragons: dealing with emotional and behavioral issues

- of an adolescent with diabetes. *The Arts in Psychotherapy*, 27(1), 27–39. [https://doi.org/10.1016/s0197-4556\(99\)00025-8](https://doi.org/10.1016/s0197-4556(99)00025-8)
- Ramsey, L. C. (2014). Windows and bridges of sand: Cross-cultural counseling using sand tray methods. *Procedia - Social and Behavioral Sciences*, 159, 541–545. <https://doi.org/10.1016/j.sbspro.2014.12.421>
- Rizzo, A., & Bouchard, S., (2019). *Virtual reality for psychological and neurocognitive interventions*. Springer.
- Rizzo, A., Pair, J., Graap, K., Manson, B., McNerney, P. J., Wiederhold, B., Wiederhold, M., & Spira, J. (2006). A virtual reality exposure therapy application for Iraq war military personnel with post traumatic stress disorder: From training to toy to treatment. *Novel Approaches to the Diagnosis & Treatment of Posttraumatic Stress Disorder*, 6(1), 235–247.
- Rogers, J. L., Luke, M., & Darkis, J. T. (2020). Meet me in the sand: Stories and self-expression in sand tray work with older adults. *Journal of Creativity in Mental Health*, 1–13. <https://doi.org/10.1080/15401383.2020.1734513>
- Roubenzadeh, S., Abedin, A., & Heidari, M. (2012). Effectiveness of sand tray short term group therapy with grieving youth. *Procedia - Social and Behavioral Sciences*, 69, 2131–2136. <https://doi.org/10.1016/j.sbspro.2012.12.177>
- Shank, N. (2015). Productive violence and poststructural play in the Dungeons and Dragons narrative. *The Journal of Popular Culture*, 48(1), 184–197. <https://doi.org/10.1111/jpcu.12242>
- Simón, A. (1987). Emotional stability pertaining to the game of Dungeons & Dragons. *Psychology in the Schools*, 24(4), 329–332. [https://doi.org/10.1002/1520-6807\(198710\)24:4<329::aid-pits2310240406>3.0.co;2-9](https://doi.org/10.1002/1520-6807(198710)24:4<329::aid-pits2310240406>3.0.co;2-9)

- Snow, S. (2009) Ritual/Theatre/Therapy. In D. R. Johnson & R. Emunah (Eds.), *Current approaches in drama therapy* (2nd ed., pp. 172–204). Charles C. Thomas.
- Snow, S., Johnson, D., R., & Pendzik, S. (2012). History of assessment in the field of drama therapy. In D. R. Johnson, S. Pendzik, & S. Snow. (Eds.), *Assessment in drama therapy* (pp. 5-30). Thomas, C. T.
- Solomon, M., Ozonoff, S., Carter, C., & Caplan, R. (2008). Formal thought disorder and the autism spectrum: relationship with symptoms, executive control, and anxiety. *Journal of autism and developmental disorders*, 38(8), 1474–1484. <https://doi.org/10.1007/s10803-007-0526-6>
- Swank, J. M., & Jahn, S. A. B. (2018). Using sand tray to facilitate college students' career decision-making: A qualitative inquiry. *Career Development Quarterly*, 66(3), 269–278. <https://doi.org/10.1002/cdq.12148>
- Tanguay, D. (2009). Adapting sandtray assessment for adults with developmental disabilities. In S. Snow & M. D'Amico (Eds.), *Assessment in the creative arts therapies: Developing and adopting assessment tools for adults with developmental disabilities* (pp. 219-256). Charles C. Thomas
- Tincani, M., & Bondy, A. (2014). *Autism spectrum disorders in adolescents and adults: evidence-based and promising interventions*. Guilford Press.
- Tisseron, S. (2011). The avatar, therapy's fast track, between potential space and disavowal. *Adolescence*. <http://doi.org/10.3917/ado.hs01.0075>
- Wang, D., & Privitera, A. J. (2019). Beyond self-report methods: Sand tray used in resilience evaluation. *The Arts in Psychotherapy*. <https://doi.org/10.1016/j.aip.2019.03.001>
- Weinrib, E. L. (2012). *Images of the self: The sandplay therapy process*. Temenos Press.

- Wilkinson, L. A. (2014). *Autism spectrum disorder in children and adolescents: evidence-based assessment and intervention in schools*. American Psychological Association.
- Williams, D. (2015). Challenging behaviors and task transitions in autism: Translating clinical phenomenology and basic behavioral process. In F. D. DiGennaro Reed, & D. D. Reed (Eds.). *Autism service delivery: bridging the gap between science and practice*. Springer. <https://doi.org/10.1007/978-1-4939-2656-5>
- Yalom, I. D., & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). Basic Books.
- Ziermans, T., Swaab, H., Stockmann, A., de Bruin, E., & van Rijn, S. (2017). Formal thought disorder and executive functioning in children and adolescents with autism spectrum disorder: Old leads and new avenues. *Journal of autism and developmental disorders*, 47(6), 1756–1768. <https://doi.org/10.1007/s10803-017-3104-6>