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ZAP: Zoom Art Program with Adults Living with Acquired Brain Injury The Effect of Using Videoconferencing to Deliver ACT Art Therapy Intervention

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This thesis, written under the direction of the candidate's thesis advisor and approved by the program chair, has been presented to and accepted by the Department of Art Therapy, at Dominican University of California, in partial fulfillment of the requirements for the degree of Master of Arts in Marriage and Family Therapy.

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ZAP: Zoom Art Program with Adults Living with Acquired Brain Injury
The Effect of Using Videoconferencing to Deliver ACT Art Therapy Intervention

By

Shari Weiser

A culminating thesis submitted to the faculty of Dominican University of California in partial fulfillment of the requirements for the degree of Master of Marriage and Family Therapy

Dominican University of California

San Rafael, CA

2022

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Abstract

The present study investigated if experienced co-presence, psychological involvement, and behavioral engagement impact the effectiveness of art therapy sessions to individuals who have experienced an ABI with persistent impairments due to an acquired brain injury. The participants include seven adult women, aged between 41 and 77, with mild to medium chronic stage ABI. Previous research has asserted that there are few options to meet psychosocial and mental health needs for individuals with an ABI in the chronic stages. Telemental health, specifically Acceptance and Commitment Art Therapy, is one way to meet the needs of this underserved population. The researcher used qualitative methods with quantitative features to understand participants' experiences. The use of multiple data collection methods measured levels of engagement, social presence, attendance /attrition rates, and the degree of satisfaction the participants reported. The Net-worked Minds measure of social-presence, an observation log, participant comments and feedback in session, sharing the art in the discussion, documentation of participant's artwork, and a Workshop Evaluation Survey provided comprehensive results. Data suggests the participants demonstrated that they experienced engagement and social presence. Sessions delivered via video conferencing were well tolerated and effective; individuals in this study created meaningful social connections with each other and gained therapeutic insights over the online platform. Further research is needed to pinpoint best practices to cultivate psychological and emotional connection online that specifically targets the needs of the ABI population.

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Introduction

Acquired brain injury (ABI) is a term that describes a range of brain injuries wherein the damage to the brain occurs after birth. An ABI can happen to anyone. The cause of ABI's can be traumatic injuries or have nontraumatic causes. Incidents such as vehicle crashes, sports-related hits to the head, or falls could cause trauma-induced injury. Strokes, diseases, and substance abuse are examples of possible causes of nontraumatic ABI (Teasell et al., 2007). They happen to people of a variety of ages, physical conditions, and socioeconomic status. ABI outcomes vary and are classified as mild, moderate, or severe.

Medical advances improve the survival rate for people who experience an ABI (Teasell et al., 2007). However, the continuation of health effects that can adversely impact a person's cognitive, behavioral, emotional, and physical aspects of their life will affect their health, social and community environment long after acute medical treatment and rehabilitation end (CDC, 2015). Rehabilitation services offered in the chronic phase most often target physical functioning even though services that target cognitive, emotional, and vocational difficulties are widely needed but are often unmet (Olver et al. 1996).

When ABI occurs in young adults, they can be living with their disabilities for decades (Ponsford et al., 2014). Nearly 5.3 million people in the United States live with long-term disability following a traumatic brain injury (TBI) (BIAA, 2014). Living with a long-term disability after a sudden and traumatic event will impact a person's quality of life. Some people heal in a manner that allows them to resume much of their prior activities and lifestyle. For many, that is not the case. Their injury has caused changes that leave them with chronic conditions that they will have to manage and incorporate into a new reality.

Deficits, both physical and cognitive, can occur after an ABI that affects the ability to communicate effectively with others. Physical changes that result from the ABI, such as loss of use

of a part of the body, can affect self-esteem and willingness to participate with others. Other factors such as impairment of cognitive processes (thinking, knowing, remembering, judging, and problem-solving) can result in significant changes in lifestyle or the ability to socialize at the same level as before the brain injury, leading to social isolation. A study by Wood and Rutterford (2006) reported that psychosocial function and community integration of persons with severe TBI were below non-injured persons on average.

Managing the new normal successfully vs. unsuccessfully rests on many variables.

Psychosocial adjustment is an essential part of post-acute care for individuals living with ABI. Cognitive, emotional, and social issues need to be addressed with therapeutic programming because these issues are essential factors in adjusting to daily living, integration within their family or community, and the possibility of returning to work or school. Many ABI survivors do not and will not return to the pre-injury level of functioning of their former lives (Teasell et al., 2007). Developing an active problem-focused coping style instead of a passive emotion-focused coping style predicts a higher quality of life in the long term (Wolters et al., 2010).

It might seem counterproductive to provide psychotherapy to brain-injured individuals due to difficulties in cognition and emotional functioning. Additionally, for many, communication issues are sizable barriers limiting such interventions' benefits, leaving people with brain injuries a narrow range of options to cope with their issues. The type of speech, language, and communication impairment is dependent on the extent and location of the brain injury. Apraxia, aphasia, dysarthria, and cognitive-communication disorder are the four most common types of impairment affecting communication. Individuals with an ABI can experience

delayed word recall, reduced emotion while communicating with others, or difficulty interpreting linguistic humor. They can find it difficult to find words and other language processing tasks. Brain-injured persons show impairments in self-focused conversation (Halbauer, J. D., et al.,

2009). Adapting therapeutic processes to people with ABI's specific needs will be dependent on the severity of the deficits and the specifics of what domains of function have been affected. However challenging, providing therapy within this population to address generalized psychological distress, anxiety, and depression is possible.

Acceptance and Commitment Therapy

Acceptance and commitment therapy (ACT) has shown promise and has been supported in a review evaluating ACT use with individuals with ABI (Kangas & McDonald, 2011). Another particularly well-suited approach to address this population's needs is art therapy because it does not rely on verbal communication or intact cognition to be effective (Sell & Murrey, 2006). Studies have shown that art therapy is supportive of brain plasticity. A safe and supportive environment can be obtained while stressing the need for flexibility in TBI treatment utilizing art therapy (Kline, 2016)

One area of concern is when Persons with ABI cannot access or experience a loss of psychosocial and emotional therapy services, which for many are an important part of their social and emotional network. Access is problematic because programs addressing mental health for individuals with chronic stage ABI, both in the public and private sectors, are limited. Additionally, when services are available, transportation, location, and financial barriers can exist preventing individuals from accessing care (Bradbury et al., 2008). Service disruption can be caused by any number of incidents such as distance to service providers, limited transportation options, or unforeseen circumstances, such as COVID-19. When their participation is interrupted, their psychological, emotional and social needs can go undetected or untreated, contributing to a heightened sense of isolation. Sustained effects of social isolation are associated with lower levels of hedonic well-being, lower levels of physical health, and poor mental health outcomes (Shankar et al., 2015).

Modalities of Intervention

While it may be difficult to engage this population in traditional talk therapy on the telephone, a possible solution would be the applications of distance technologies to provide group art therapy sessions via a teleconferencing platform such as zoom to meet the psychosocial and emotional support needs of this population. The purpose of this paper is to determine if art therapy delivered to individuals with ABI via a video conferencing platform such as Zoom, from an Acceptance and Commitment perspective would be beneficial for treatment because participants will experience co-presence, psychological involvement and behavioral engagement. The study will gauge the degree to which participants engage in the process in relation to social presence and meaningful engagement. The participants will be individuals with ongoing psychosocial needs due to an acquired brain injury and have been receiving support services from a nonprofit organization specializing in brain injury support. Currently, these individuals cannot access services outside of their homes due to COVID-19.

Art Therapy

According to the American Art Therapy Association, art therapy is defined as “is an integrative mental health and human services profession that enriches the lives of individuals, families, and communities through active art-making, creative process, applied psychological theory, and human experience within a psychotherapeutic relationship” (American Art Therapy Association, 2017). Research shows individuals with persistent impairments due to an acquired brain injury benefit from art therapy and modes of treatment outside of traditional talk therapy and this study aims to explore how art therapy delivered online with this population during COVID19 might be successful.

Research Questions

The research is driven by the primary question: Does experienced co-presence, psychological involvement, and behavioral engagement play a role in the effectiveness of providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to individuals with persistent impairments due to an acquired brain injury? The researcher hypothesizes that during online, group ACT art therapy sessions, participants will experience co-presence, psychological involvement, and behavioral engagement as measured by multiple reporting measures. Photos of Art, an Observation log, The Networked Minds Social Presence Inventory (NMSPI) (Harms & Biocca, 2004) and a Satisfaction survey will be utilized to obtain data.

The research is driven by these exploratory questions:

1. What does the art process look like for individuals during sessions of higher engagement versus sessions of lower engagement?
2. Is the art therapy online group well-tolerated by participants? This will be assessed by attrition rates and by a follow-up questionnaire.

Conclusion

This chapter explores the foundation of this research which is to understand how individuals with persistent impairments due to an acquired brain injury might benefit from group Acceptance and Commitment Art Therapy sessions delivered via video conferencing during the COVID19 pandemic.

Literature Review

This chapter explores the foundations of the research including acquired brain injury, art therapy, online telehealth psychotherapy. Relevant research will be presented to underscore the importance of this research during the COVID19 pandemic.

Acquired Brain Injury

There are two significant categories of brain injuries, ones that occur before birth, and brain injury that occurs after birth. Brain injuries that occur before birth injuries can be hereditary, congenital, degenerative, or induced by birth trauma. After birth, injuries are considered an acquired brain injury (ABI). An ABI often results in a change in neuronal activity. Neuronal activity plays a critical role in the formation and function of neuronal circuits as the number, relationships between the structures, and efficacy of synapses are dramatically modified by the pattern of neuronal activity (Brain Injury Association of America, 2020).

Mild, moderate, or severe impairments may result from an ABI and may occur in more than one area of the brain. Impairments include cognition, speech, language, communication, memory, attention and concentration, reasoning, abstract thinking, physical functions, psychosocial behavior, and information processing. These impairments may be either temporary or permanent and cause partial or total functional disability or psychosocial maladjustment (Giustini et al., 2013).

To better understand this study's selected population, summarizing the spectrum of acquired brain injuries and identifying similarities and differences between and within the groups can be useful. ABI breaks down into two primary subcategories: traumatic and non-traumatic.

Traumatic Brain Injury

A traumatic brain injury (TBI) can be caused by a forceful external impact on the head or body or an object that pierces the skull and enters the brain. TBI can cause brain function problems, including problems with how the person thinks, understands, moves, communicates, and acts (The

National Institute of Mental Health, 2020). There are two wide-ranging types of head injuries: penetrating and non-penetrating, terms that refer to the skull's condition at the time of the injury. (Functional Analysis in Clinical Treatment, 2020 p.272).

Penetrating TBI, also known as open TBI, is less prevalent than closed head trauma but is accompanied by a worse prognosis, severe disability, or death. Injuries happen when the object pierces the skull and enters the brain tissue. The first point of injury comes from the projectile crushing the soft brain tissue in its path. Further damage to the brain is caused by secondary projectiles stemming from the object entering the brain and impacting the skull. This TBI type is associated with violence, accidents, and suicide attempts (Kazim et al., 2011). Phineas Gage is a famous example of a penetrating TBI. While working on the railroad, a metal rod pierced through his head and brain and destroyed much of his left frontal lobe. His personality changes are well documented (Barker, 1995 as cited in Functional Analysis in Clinical Treatment, 2020 p.227).

Non-penetrating TBI is also known as closed head injury or blunt TBI. An external force powerful enough to move the brain within the skull causes this. There are many ways to incur this type of TBI, including falling, motor vehicle accidents, sports injuries, being struck by an object or injured by a blast, violent shaking of the head, and injury from the force of whiplash (The National Institute of Mental Health, 2020). The two most common forms of non-penetrating traumatic brain injuries are a diffuse axonal injury (DAI) and concussion. With a DAI, there is widespread damage to the brain's white matter, which contains axons that carry electrical impulses and connect various brain areas. This type of injury is commonly a result of auto accidents, falls, or sports injuries. DAI is one of the most common brain injury types (The National Institute of Mental Health, 2020).

There was a time, not too long ago, where concussions, also called mild traumatic brain injuries (MTBI), were not considered a severe injury and viewed as one that you just shook off. Today there is mounting evidence that although a single concussion will not typically cause serious

long-term health consequences, multiple concussions or inadequate healing can lead to severe impairments. Athletes who participate in contact sports, military members, and others who have had repeated concussions are susceptible to chronic traumatic encephalopathy (CTE). CTE is a critical condition associated with thinking, memory issues, personality, and behavioral changes (Turner et al., 2013).

Non-Traumatic Injury

If an external physical force does not cause the brain's injuries to the head, it is considered a non-traumatic acquired brain injury (Dimanescu, 2007). Non-Traumatic brain injury (NTBI) can be caused by many conditions such as brain tumors, airway obstructions, vascular disruption, heart attack, stroke, arteriovenous malformation, infectious disease, meningitis, toxic exposure, and illegal drug use (Giustini et al., 2013). Total lack of oxygen to the brain causes an anoxic brain injury. A hypoxic brain injury results from a reduced flow of the required amount of oxygen to the brain. Anoxic and Hypoxic brain injuries are the most commonly experienced NTBI (Functional Analysis in Clinical Treatment, 2020 p.272)

The effects of a nontraumatic brain injury are comparable to those associated with a TBI in terms of impairment in the injury's aftermath. There are also some differences. A non-traumatic brain injury can spread to all areas of the brain because of how the injury attacks the cellular structure of the brain. TBI, however, usually only affects localized or concentrated areas. (Giustini et al., 2013).

ABI Chronic Condition

It is well documented that ABI can be associated with significant impairments affecting an individual's physical, cognitive, emotional, behavioral, and social functioning in a long-term chronic manner (Barman et al., 2016; Lloyd-Jones et al., 2010). The acute medical model handles illnesses and conditions by adopting a "find it and fix it" approach (World Health Organization, 2001). This

approach aims for a cure or to reduce impairment physically. While life-saving care and rehabilitative services are available in the acute stage of ABI, far fewer treatment options exist for the needs of those in the chronic stage of ABI to address the person's well-being and to facilitate psychological adjustment and community reintegration (Masel, & DeWitt, 2010). Psychosocial interventions are hard to access for people affected by chronic conditions of ABI. Approximately three-quarters of people living with ABI feel that their psychological needs are not met (McKevitt et al., 2011).

Studies continue to point to a need for holistic person-centered interventions, encompassing an overall treatment strategy for people in a chronic phase (3 months to >10 years (National Academies of Sciences et al., 2019) of ABI. In a randomized control study, Bender et al. (2016) investigated goal attainment and the quality of life, participation, care needs, and burdening of relatives with individuals whose symptoms were in the chronic stage of ABI.

Half the participants were involved in specific therapeutic activities with sufficient times for breaks and therapeutically supervised mealtimes. These activities included individual therapy, occupational therapy, physiotherapy, speech therapy, and group therapy that focused on everyday activities. Affolter tactual interaction therapy was used as an approach for the majority of the therapy. Tenets of this therapy include; the relationship between tactile-kinesthetic input and problem-solving skills, nonverbal guiding to facilitate perceptual-cognitive interaction, therapy emphasizes appropriate input rather than successful output (Bender et al., 2016). The treatment team included a nurse and doctor, occupational therapist, physiotherapist, speech therapist, social service provider. Control group participants received their standard treatment of physiotherapy, occupational therapy, and speech therapy.

The researchers concluded that individuals with acquired brain injury who received participation-focused outpatient treatment demonstrated that they could attain their patient-specific

goals pertaining to everyday life more frequently than those receiving standard care practices. The study's results suggest that therapeutic interventions that consider the whole person will be more successful than an ad hoc approach.

Socio-Psychological Implications

Persons who have experienced ABI have ongoing rehabilitation needs that evolve and change as they move through these stages, acute phase, in-patient rehabilitation, homecoming, and long-term recovery. In an investigation that utilized semi-structured interviews with 80 respondents with TBI and 85 primary caregivers, Rotondi et al. (2007) identified several key areas where participants felt they had needs and linked them to the respondent's stage of recovery. Their findings suggested that Socio-psychological care components are high on the priority list of needs for both persons with TBI and their caregivers, as they are of concern in all four stages of recovery. The authors indicated a need to incorporate the following care components; provide emotional and psychological support; teach family problem solving to adapt to changes that had occurred, such as changes in family roles and in the personality of the injured person; stress management, and behavioral management techniques; facilitate life planning, and emphasize community integration. Persons who had experienced TBI and their family members perceived the current healthcare system as deficient in these areas (Rotondi et al., 2007).

Jones, Haslama, and Jettena et al. (2009) investigated the relationship between injury severity and wellbeing with individuals with acquired brain injury (ABI). They posited that personal identity and changes in social relationships with family, friends, and work colleagues following ABIs play a role in the relationship between injury severity and wellbeing for individuals with ABI. Researchers found a positive relationship between injury severity and life satisfaction mediated by identity strength and personal and social changes. They concluded that services with approaches

that reinforce personal identity and social relationships might benefit individuals recovering from ABIs.

The measure of life satisfaction of people with a brain injury does not correspond solely with symptom severity after injury; an individuals' personal and community resources impact their sense of well-being. Ditchman, Keegan, and Batchos (2016) described a "sense of community" (SOC) as the feelings of belonging and attachment one has for a community. They examined SOC and social identification with one's town to identify if they contributed to life satisfaction outcomes among adult members from brain injury associations in the United States. The outcome pointed out that social integration and social support collectively predict life satisfaction among individuals with brain injury. The findings indicated that intervention providers need to work jointly with ABI clients to understand their need for community ties that align with their social identity.

Doering et al. (2011) provided evidence for a mediational role of self-concept of achievement in adjustment to ABI in different life domains that affect subjective well-being. Thirty-five individuals in the post-acute stage of ABI participated in the study. The "Frankfurt Self-Concept Scale" (FSKN), a German instrument assessing attitudes of self (Deusinger, 1986 as cited in Doering, et al., 2011) measured the self-concepts; achievement, general self-worth, mood/sensibility, and psychosocial aspects. Additionally, assessments for memory performance, attention, concept formation, and reasoning were performed. Data concerning subjective complaints in applied cognition, self-concept, and subjective well-being were collected as well. The findings suggested that the self-concept of achievement is an influential factor in adapting to ABI. In use with therapeutic interventions, this insight can help individuals improve self-evaluations after ABI and with a more positive self-concept, an improved sense of subjective well-being.

Other investigations involving individuals with ABI and its impact on identity have also concluded that positive or negative identity and self-concept are psychological factors involved in

positive or negative adjustment after a brain injury. Carroll and Coetzer (2011) surveyed a group of 29 participants with TBI who were at a longer post-injury time frame than are most frequently studied. Using the Head Injury Semantic Differential Scale (HISDS-III), Brain Injury Grief Inventory (BIGI), Hospital Anxiety and Depression Scale – Depression, Rosenberg Self-Esteem Scale (RSES), and the Awareness Questionnaire (Self/Significant other/Clinician versions), they sought to examine associations between identity change, grief, depression, self-esteem, and self-awareness. The findings confirmed previous research and pointed to the value of taking into account the experience of self-concept and identity changes throughout the rehabilitative path; furthermore, it could inform other therapeutic interventions such as psychological therapy.

Acceptance and Commitment Therapy

Previous research has indicated that holistic person-centered interventions that encompass an overall treatment strategy best serve individuals in the ABI chronic phase. Acceptance and Commitment Therapy (ACT) is a therapeutic approach that promotes psychological flexibility instead of addressing specific symptoms.

ACT is an evolution of the Cognitive Behavioral theoretical approach, which has three waves. ACT falls into the third wave of therapies, which endeavors to change the function of thoughts, beliefs, perceptions, and cognitive schemas and the individual's relationship to their psychological and contextual experiences (Hayes et al., 2006). It utilizes six overlapping and interrelated processes: acceptance, cognitive defusion, contact with the present moment, self-as-context, values, and committed action (Hayes et al., 2006).

In order to identify if an Acceptance and Commitment Therapy (ACT) intervention (ACT-Adjust) can facilitate psychological adjustment and reduce psychological distress following a severe traumatic brain injury (TBI), Whiting et al. (2019) conducted a randomized, controlled trial comparing two treatments ACT-Adjust versus Befriending, to test three hypotheses. First,

Participants receiving ACT-Adjust would show improved levels of psychological flexibility and participation in meaningful activities. Secondly, they would report significant reductions in psychological distress and increases in quality of life. Lastly, Participants would maintain treatment gains in primary/secondary outcomes at a one-month follow-up compared to active control condition participants.

While the data did not support the primary hypothesis that ACT-Adjust would be more effective than Befriending in increasing psychological flexibility and participation, it did demonstrate some improvements in psychological flexibility. Significantly, a group by time (baseline and post-intervention) interaction effect was found for depression and stress (DASS), with reductions in the intervention group between pre-and post-injury. The interaction effect was not found in the Befriending group. The differences were not maintained one month later, suggesting that ACT demonstrated significantly decreased psychological depression and stress for individuals with a severe TBI, but further sessions following the initial seven allotted for the study were required to maintain treatment gains.

This study points to a need for some ongoing maintenance program to ensure the continued psychosocial well-being of individuals with ABI. Given the ongoing therapeutic needs of individuals in the chronic phase of ABI, it appears that an Acceptance and Commitment Therapy (ACT) theoretical framework for interventions might be successful.

Art Therapy

The need for psychosocial rehabilitation services for individuals with long term ABI has been established in this thesis. Art therapy has been found to be an effective intervention for addressing some of these needs. Art Therapy is a branch of psychotherapy. It utilizes artistic creation to promote growth and healing in those enduring trauma or illness, working on personal development, or struggling to deal with day-to-day living (American Art Therapy Association,

2017). Art therapy is utilized to improve cognitive function, and sensory-motor function. It can help foster self-esteem and self-awareness. Art therapy is used to cultivate emotional resilience, promote insight, enhance social skills, reduce and resolve conflicts and distress, and advance societal and ecological change (American Art Therapy Association, 2017). Art therapy has been useful for helping individuals build coping skills to promote ongoing well-being. The process of creating art encourages the development of skills that increase cognitive ability and self-awareness.

Furthermore, art therapy can help a person shift their negative coping strategies, leading to the development of problematic behavioral symptoms or limiting beliefs imposed by a disability or a disease to more useful strategies.

Heenan (2006) investigated the use of art therapy, an approach based on the social model of addressing mental distress as an alternative to the medical model. The rationale behind the study is for mental health issues. The traditional medical model is limited due to how it narrowly considers problems through the lens of symptom reduction or cure. This approach does not adequately consider the interaction of social factors with biological ones in the construction of health and disease models. The art therapy research results demonstrated the positive impact of participatory art (Heenan, 2006). Not only did the service users report an increased level of self-esteem and self-confidence, but the participants in this study described the art therapy program as a safe space to reflect on and begin acknowledging and addressing their mental health issues. The art therapy program provided a positive stimulus for participants to begin engaging in a broader range of services and activities. (Heenan, 2006).

Communication

The research topic of human communication is vast and broad. Dissimilar fields of research use it as a theoretical construct. Cell biology, computer science, ethology, linguistics, electrical engineering, sociology, anthropology, genetics, philosophy, semiotics, and literary theory use the

term. While there is a common central meaning, the way the term communication is used across disciplines differs greatly (Krauss & Fussell, 1996). For this study, communication will mean an interactive exchange between two or more people to convey ideas, feelings, and needs.

Additionally, this paper will consider Bruno G Bara's (2010) point of view that human communication is "a social activity of a combined effort of a[t] least two participants, who consciously and intentionally cooperate to construct together the meaning of their interaction." (p. 1). Given that communication is a dynamic interplay between the sender and receiver of messages, when adding other levels to the communication exchange, such as mediating it through technology, one should consider what happens to the balance of cooperation that Bara describes. The social interplay aspect of communication is salient in relation to this study for two reasons.

First, it is well documented that even in mild cases, individuals who have ABI have some form of communication issues. Communication debilitations range from apparent motor speech impairments or primary language impairments such as dysarthria, apraxia, aphasia, fluency, or voice disorders to subtle but equally impairing cognitive-communication disorders (MacDonald, 2017). Aphasia is the inability to understand and construct language. Apraxia involves difficulty performing tasks or movements associated with speech affecting the lips, jaw, and tongue. One type of apraxia affects speech. Dysarthria is the result of weak muscles used for speech. It causes slow or slurred speech (Guay, 2018).

While motor speech problems or primary language impairments are more easily diagnosed and treated, research by Blake, Frymark, and Venedictov; Ferré and Joannette; Sarno; Halper, Cherney, and Miller indicate cognitive-communication disorders are more prevalent with rates around 75% or greater (as cited in MacDonald, 2017). Cognitive-communication disorders create challenges in social communication (pragmatics), listening, speaking, conversation, as well as in reading and writing as a result of one or many cognitive impairments in attention, memory,

organization, information processing, problem-solving, and executive functions (Togher et al., 2014). There are limited clinical guidelines on the use of digital and online communication with individuals experiencing cognitive-communication deficits (Togher et al., 2014).

Secondly, mediated communication adds another layer of information to the process between the sender and the receiver. Studies of online education demonstrate that the level of social engagement impacts student success rates. Inadequate communication in online learning between instructors and learners due to lack of face-to-face presence could lead to student's frustration, less participation, dissatisfaction, or even higher dropout rates in online courses (Reio and Crim, 2006). This fundamental problem is also an issue when providing psychosocial services to individuals with ABI using video conferencing technology. Feelings of disconnectedness can occur in mediated communication when it is harder to read and react to nonverbal cues, impacting relational interactions within the group. In the absence of face-to-face interactions, it is possible that participants will not feel as if they are active members of the group due to the altered social dynamic created by mediated communication. This researcher has not found any studies directly addressing whether or not mediated communication creates a sense of disconnectedness within the population of individuals who have ABI.

Social Presence

The focus of this study is social presence and satisfaction with technology-mediated communication to deliver an art therapy support group. Therefore, the theory of social presence underpins this research. The theory has its roots in the social psychological theories of interpersonal communication and symbolic interactionism (Biocca et al., 2001; Biocca et al., 2003; Sallnäs, 2005). Most research on social presence credits the modern interpretation of the concept to Short et al. (1976), who expanded the concept to encompass social interactions within the context of mediated communication. Cui et al. (2013) popularized the term social presence in their book *The*

social psychology of telecommunications. Social presence theory details the processes through which people are able to understand each other's intentions during social interactions, emphasizing how this is done within mediated interaction technologically (Biocca and Harms, 2002). A key concept of social presence is that in order for satisfactory collaboration to take place the social richness of the communication medium has to be matched with the task (Sallnäs, 2005). This theory helps to unpack human interaction through technology and describes how certain social cognitive processes in humans might be affected, distorted, and enhanced (Biocca and Harms, 2002).

Gunawardena (1995) applied the concepts of social presence to online education and posited that moderators were needed to create a sense of community, and her work with Zittle (1997) examined the causal determinants of communication differences (as cited in Cui et al., 2013). Gunawardena and Zittle determined that perceptions of the medium's social and human qualities depend on the social presence cultivated by the moderators and the online community (Cui et al., 2013).

Biocca and Harms (2002) defined social presence as the sense of being with others in a mediated environment. In their framework of social presence, mediated social presence is the "moment-to-moment awareness of co-presence of a mediated body and the sense of accessibility of the other beings psychological, emotional, and intentional states" (Biocca and Harms, 2002). The sense of psychological and emotional connection in spite of the physical disconnection is the focus of this research. Harms and Biocca (2004) created the Network Minds Social Presence Inventory (NMSPI) to assess perceptions of mediated communication to measure human connection (Harms & Biocca, 2004). It considers whether the sender of a message feels socially situated with the receiver of the message and if one perceives that they are in another mind's presence. The Survey poses questions like, "It was easy for me to understand [sender or receiver of the message]" and "[sender or receiver of the message] found it easy to understand me." (Harms & Biocca, 2004). The

ability to build a sense of safety and group within the framework of a teleconferenced art therapy experience is necessary for effective treatment. In choosing this assessment to anchor this study with this measure, it is hoped that the outcome will demonstrate that it is possible to cultivate a sense of social presence within a supportive online environment.

Conclusion

This chapter reviewed the literature most relevant to this study including acquired brain injury and art therapy. There is a significant need for alternative therapies for individuals with acquired brain injury so they can continue to engage with others and live lives they enjoy while experiencing the ongoing condition of brain injury. Because their symptoms are chronic, ACT and art therapy are ideal as an approach since both utilize process and present moment awareness. Furthermore, ACT promotes value-based living, regardless of the presence of symptoms. The following chapter describes the methods used in this study.

Methodology

This study was focused on participants' perceptions of social presence and satisfaction while receiving group ACT art therapy online via a computer-mediated environment. The objectives guiding the study included 1) describing the participant's perceptions of social presence during a four-week art therapy protocol delivered using Zoom 2) describing their satisfaction with conversations and interactions that take place within the context of the online art therapy experience, and 3) to describe the association between perceptions of social presence and satisfaction with Zoom mediated art therapy.

The researcher hypothesized that individuals with ABI, who could not access services outside of their homes due to Covid-19, would perceive a high level of social presence, experience co-presence, psychological involvement, and behavioral engagement during participation in group ACT art therapy sessions delivered via Zoom. It was also hypothesized that the mediated communication would not impede the effectiveness of the art therapy.

Exploratory questions

Primary question

Did experienced co-presence, psychological involvement, and behavioral engagement play a role in the effectiveness of providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to individuals with persistent impairments due to an acquired brain injury?

Exploratory questions

What did the art process look like for individuals during sessions of higher engagement versus sessions of lower engagement?

Was the art therapy online group well-tolerated by participants? This was assessed by attrition rates and by a follow-up questionnaire?

Population

The participants were adults over the age of 18, with chronic stage ABI who participate in programs offered at a center for brain injury recovery, a nonprofit, post-acute therapeutic center offering various rehabilitative and supportive services in a suburban setting just outside San Francisco. With IRB approval, participants were recruited from the center via their referral of specific participants. The researcher emailed invitations and had follow up phone calls organized with the input and help of the Schurig center resource specialist. See Appendix A for permission from the Schurig Center for Brain Injury Recovery Center.

The study used convenience sampling chosen from the Schurig center population, which consisted of ethnically and culturally homogenous Caucasian male and female adults. They exhibited a range of physical and cognitive disabilities. To be accepted into the study, participants had experienced their injury between 1 or more years earlier and were considered in the chronic phase of ABI with a mild to medium range of cognitive impairment, wrote and communicated in English, had an interest in participating in an art therapy group, and had a computer or other device capable of running the platform Zoom. They also needed to have internet access available and to be able to log on to Zoom. If needed, a caregiver helped with this part of the task. Participants ranged in their independence level and in their living arrangements. The location where the research study and data collection took place was each individual's choice where they have a computer.

Exclusion criteria included participants not having access to Zoom, having significant cognitive communication challenges that prohibited them from engaging in a group, and lacking the ability to independently provide informed consent. Severity in the ability to communicate was determined by specialists at the Schurig center. Additionally, the inability to access the internet was an exclusion criteria. Participants chosen for this study did not have had experience doing art

therapy using video conferencing technology but were not excluded if they had previously participated in art therapy sessions in person at the center's art studio.

Research Design

The research design of this study was a qualitative study that used quantitative features. Qualitative research is used to understand participants' experience. The use of multiple data collection methods attained more comprehensive results from the research study. For this study, the research was most interested in how participants were engaged in the online ACT art therapy group.

Engagement was assessed after each group and compared across time for each participant in order to understand individuals patterns of engagement. Additionally, the therapeutic art process was examined to answer the question “what does the art process look like when participants are engaged versus when they are unengaged?” The art process consisted of discussion about a theme consistent with ACT therapy, time to create an image response to a given theme, and sharing of completed art. It was assumed that engagement would vary across sessions for each participant.

The research consisted of four separate 90-minute sessions that occurred once a week, which provided enough time to collect qualitative and quantitative data, as well as time to complete the art directives.

Confidentiality

In order to protect the confidentiality of the participant's identity, each participant in the Zooming Art Program was assigned an alias name. Additionally, the study employed APA's guidelines regarding practicing telepsychology. These guidelines provided best practice protocols for the competence of the therapist, standards of care in the delivery of telepsychology services, informed consent, the confidentiality of data and information, security and transmission of data and information, disposal of data and information and technologies, testing and assessment, inter-jurisdictional practice (American Psychological Association. 2013).

Online sessions used safety protocols provided by Zoom, two-factor authentication, private invitation-only event, waiting room to ensure only participants entered the event, disabled private chat, and host-controlled screen sharing. Sessions were not recorded. Survey Monkey has robust security measures ensuring the safety and anonymity of the collected data. Survey Monkey stated that respondents' information is securely stored in SOC 2 accredited data centers that adhere to security and technical best practices. They ensure that collected data is transmitted over a secure HTTPS connection, and user logins are protected via TLS. Data at rest is encrypted using industry-standard encryption algorithms and strength. Collected digital data is stored utilizing password protection. All research information will be kept by the researcher for seven years and used only for research purposes.

Procedures

The goal of the sessions was to use the Zooming Art Program to provide continued support to individuals with persistent impairments due to an acquired brain injury. The groups used elements of Acceptance and Commitment Therapy (ACT) to help participants identify and incorporate their personally-identified values into their day-to-day life.

The researcher met with participants for a total of four sessions, plus phone or email communication to cover research project orientation, consent expectations and debriefing. Each session included an art directive as well as specified assessments. Below the sessions are listed in detail.

Pre-Screening

Before the first session, the researcher worked with the resource specialist at a center in Northern California focused on outpatient, post-acute therapeutic rehabilitative and supportive services for people with ABI. Communication with prospective participants was accomplished via phone or email in order to explain the research more specifically, and determine the eligibility of the

participant. Eligible participants were adults who utilize services at the center, ages range from 18 up. The participants chosen had experienced their injury between 1 or more years earlier and are considered in the chronic phase of ABI with a mild to medium range of severe cognitive impairment.

Demographic information was provided by the participants, (Appendix H) it included age, ethnicity, length of time since the participant acquired their brain injury, and living environment.

Participants ranged in their independence level in their living arrangements. Participants chosen for this study did not have had experience doing art therapy using video conferencing technology but were not excluded if they had previously participated in art therapy sessions in person at the center's art studio. Exclusion criteria were inability to access the internet, inability to give or communicate informed consent independently, and a severe inability to communicate as determined by specialists at the Schurig center.

The researcher suggested participants choose a quiet and private location within the place they live and asked the participants to respect the privacy of other participants by wearing headphones or earbuds if living in a shared space. Caregivers and/or support people maintained their assistive role for the participants during sessions and were required to maintain privacy protocols as well.

Orientation

Clients selected from the center were contacted to see if they were interested in participating in the study. Usual communication at the center is by both phone and email. During the orientation conversation with participants, they were provided with the informed consent (Appendix G), the demographic questionnaire (Appendix H). The study was explained to them verbally and in writing. Because this was a vulnerable population who could have been especially prone to communication misunderstandings, extra time and attention was paid to this step. They were given a chance to ask

questions and the researcher made sure that any questions were addressed. Each session included a reminder of the purpose of the study and confirmation of their ongoing consent.

Additionally, they were asked to sign a consent form for their participation and to use photos of their artwork. Participants were made aware that photographs would be taken of each person's art when they shared it and would be part of the data collection. Consent would permit the artwork to be reproduced and shown for educational and research purposes. Names remain confidential.

Participants could have still joined the group if they declined to have their artwork used for the research. They could have changed their mind without negative repercussions or consequences.

Zoom Art Program: First Session

Materials provided and utilized were paper, markers, colored pencils, and water-soluble oil pastels.

An email was sent on Friday, the day before the Saturday session with the link to access zoom. The invitation to Zoom email was sent the day before session time to mitigate any memory issues.

After admitting everyone to the Zoom room and quick verbal check-in to see if anyone had any problems with the technology that needed addressing, any information gathered was recorded in the observation log.

A brief orientation to the study was given to participants verbally utilizing Zoom and in email. The researcher explained the study's purpose, went over zoom protocols, and group ground rules. The participants were reminded that the group's purpose was to provide a safe space for them to talk about their experiences, feelings, and share strategies for moving forward. Directives were informed by acceptance and commitment therapy. Sessions followed these themes: self-awareness, present moment, identification of values, and activating values.

The art component started with a warm-up that consisted of a guided discussion tied to the session's focus. The first week's focus was "knowing yourself", the directive facilitated introducing themselves to the group. An explanation of the directive was given and participants could ask questions. The directive was to "create an image depicting yourself and what is most important to you". Participants already had their art materials as they were sent ahead of time.

Participants had a half-hour to work on art. After completing the art, participants got a chance to share their images followed by the opportunity to talk about their experiences and feelings. Feedback from the group was invited. At the end of the session the group was reminded to follow the link in their email to the NMSPI (Harms & Biocca, 2004) to assess social presence. The survey was administered through Survey Monkey (Appendix B). A reminder about the upcoming session was verbally given as well as in the email with the link.

Zoom Art Program: Second Session

Materials provided for use were paper, markers, colored pencils, and water-soluble oil pastels.

An email was sent on Friday, the day before the Saturday session with the link to access zoom. The invitation to the Zoom email was sent the day before session time to mitigate any memory issues.

After admitting everyone to the Zoom room there was a quick verbal check-in to see if anyone had any problems with the technology that needed addressing, any information gathered was recorded in the observation log. The official session began following the same structure as the first week.

The second session's focus was on exploring feelings with mindfulness. The art directive was "interpreting feelings." The directions were to divide the paper in half. On the first half, create an image based on how you are feeling in this moment using colors and shapes depicting what your

emotional state is. After the participant was satisfied with their emotion images, they were directed to create a color/ shape key on the second half of the paper using words to label the emotions and give personal meaning to the feeling.

Participants had a half-hour to work on art. After completing the art, participants got a chance to share their images followed by the opportunity to talk about their experiences and feelings. Feedback from the group was invited. At the end of the session the group was reminded to follow the link in their email to the NMSPI (Harms & Biocca, 2004) to assess social presence. The survey was administered through Survey Monkey (Appendix B). A reminder about the upcoming session was verbally given as well as in the email with the link.

Zoom Art Program: Third Session

Materials provided for use were paper, markers, colored pencils, and water-soluble oil pastels.

An email was sent on Friday, the day before the Saturday session with the link to access zoom. The invitation to the Zoom email was sent the day before session time to mitigate any memory issues.

After admitting everyone to the Zoom room there was a quick verbal check-in to see if anyone had any problems with the technology that needed addressing, any information gathered was recorded in the observation log. The official session began following the same structure as the first week.

In the third week, the theme was to identify core life values that create a sense of meaning and vitality. Based on a Liebmann (2004) directive, place yourself on an island with the things most important for you to thrive. Indicate “can’t live without” activities and people there.

What would you leave behind? The participants were given this directive. Imagine you are in a place that is a blank slate. Focus on what you value and what makes you thrive. Create an

image about the stuff you care about, the stuff that makes you thrive. Image can be done however the participant chooses.

Participants had a half-hour to work on art. After completing the art, participants got a chance to share their images followed by the opportunity to talk about their experiences and feelings. Feedback from the group was invited. At the end of the session the group was reminded to follow the link in their email to the NMSPI (Harms & Biocca, 2004) to assess social presence. The survey was administered through Survey Monkey (Appendix B). A reminder about the upcoming session was verbally given as well as in the email with the link.

Zoom Art Program: Fourth Session

Materials provided for use were paper, markers, colored pencils, and water-soluble oil pastels.

An email was sent on Friday, the day before the Saturday session with the link to access zoom. The invitation to the Zoom email was sent the day before session time to mitigate any memory issues.

After admitting everyone to the Zoom room there was a quick verbal check-in to see if anyone had any problems with the technology that needed addressing, any information gathered was recorded in the observation log. The official session began following the same structure as the first week.

In the fourth and final meeting the theme was activating identified values, small acts in the direction participants would like to go. The art directive: consider the saying, "Do More of What Matters." Create a personal image in response to this quote of one doable thing.

Participants had a half-hour to work on art. After completing the art, participants got a chance to share their images followed by the opportunity to talk about their experiences and feelings. Feedback from the group was invited. At the end of the session the group was reminded to

follow the link in their email to the NMSPI (Harms & Biocca, 2004) to assess social presence. The survey was administered through Survey Monkey (Appendix B). A reminder about the upcoming session was verbally given as well as in the email with the link.

The session ended with enough time for closure and thank you for participating in the study.

Follow-up

Following the last session, a wrap up email was sent. It contained a link to the weekly NMSPI (Harms & Biocca, 2004) to assess social presence, as well as a link to the Workshop Evaluation Survey (Appendix D). The questions in the evaluation revolve around participant user experience and satisfaction level of the four-week art therapy program. In the same email participants received a copy of the debriefing statement (Appendix E). The researcher read it to the participants at the end of the last session. The researcher's contact information was provided for any additional needed information or concerns. All artwork was photographed/screenshotted. Images of the artwork will be destroyed after seven years by the researcher.

Measures

The researcher measured participant's level of engagement, social presence and satisfaction by utilizing multiple reporting measures.

Photos of Art

Photographs (screenshots) of participants' artwork were taken to document work done by participants in the sessions.

Observation log

Observations, including time spent working the image, whether the artwork was on topic, and if the participant shared and engaged with others about the image they created were reported in the log. See Appendix C for the observation log.

Net-worked Minds

The Net-worked Minds measure of social presence was administered to test social presence. The level of social presence as defined as a "sense of being with another in a mediated environment" social presence is the moment-to-moment awareness of co-presence of a mediated body and the sense of accessibility of the other being's psychological, emotional, and intentional states (Biocca and Harms, 2002). An adapted version of the Networked Minds Social Presence Inventory (NMSPI) (Harms & Biocca, 2004) was administered through Survey Monkey. A link to the survey was shared in an email to each participant after each weekly session ends. The researcher also verbally asked participants to complete the survey weekly and reminded participants to get the link from email. The subscales chosen for the current study measured perceived co-presence, engagement, and message understanding in the present study.

The survey was modified (e.g., references to "my partner" were replaced with "group members," and the survey was shortened to 10 questions). The measure was shortened and the language adjusted to facilitate clear understanding and ease of use by the participants, given their cognitive and memory issues. See Appendix B for the Net-worked Minds. Permission has been given from the author of the study (see Appendix F).

Three subscales from the Networked Minds Measure of Social Presence Inventory (NMSPI), a validated social presence measure, were utilized for this experiment. Harms and Biocca (2004) had 240 student participants randomly assigned to one of three conditions to test the measures' internal consistency and criterion validity. The conditions were face-to-face interaction, mediated interaction via text-based low affordance media, and mediated interaction via video-conferencing high affordance media. Specifically, the study tested the measure's ability to distinguish social presence levels that almost all theories suggest exist between (1) face-to-face interaction and mediated interaction and (2) different levels of mediated interaction. Confirmatory factor analysis

was utilized to test whether the Networked Minds Social Presence scale's factor structure was consistent with the dimensional structure suggested by the theoretical analysis of the social presence construct (Harms and Biocca, 2004). The factor structure supported the Networked Minds Social Presence measure's construct validity. Each factor or subscale appeared internally consistent, as confirmed by Cronbach Alpha scores consistently greater than .80 across all factors. There is currently no specific tool to measure social presence specific to the needs of the ABI population.

Workshop Evaluation Survey

A final evaluation was given to participants to understand their subjective experience in the group. It included four Likert items pertaining to the participant's level of like/dislike of using video conferencing to connect, the group sharing interaction experience, art interventions, art to facilitate communication. The Workshop Evaluation Survey also included two open-ended written responses about general subjective feelings about their experience. See Appendix D.

Materials

The researcher provided the materials for this four-week cycle of art therapy delivered by Zoom. Art supplies were sent in a package to the participant as an art kit. Inside the package was 60 lb., 12 in. x 18 in paper, DuoTip Washable Markers by Faber-Castell, Watercolor Pencils by Sargent Arts, Crayola Portfolio series water-soluble oil pastels and a small size 3 paintbrush. All materials were non-toxic and new packages ensured the art materials were sanitary and in compliance with health standards during COVID-19.

Data Collection Methods

The research study used both qualitative and quantitative measures in order to evaluate the value and experience of the participants in the study.

Quantitative Data

The Networked Minds Social Presence Inventory (Harms & Biocca, 2004) is a 34-item scale that utilizes a 5-point Likert scale to measure three orders of social presence through self-report (see appendix B). The three orders are Co-presence, psycho-behavioral interaction, interpersonal symmetry. Subscales measure perception; perceived behavioral interdependence, psychological engagement, self, other, attentional engagement, emotional contagion, and comprehension. The first and second orders of social presence are measured through scoring on the respective sections of the measure, while the third order of social presence is calculated through the correlation between the subscales (Harms & Biocca, 2004). The data was analyzed by comparing the results from the NMSPI (Harms & Biocca, 2004) collected at the end of each art-making session to indicators of social presence presented in the observation log in order to look for trends of increased Psycho-behavioral interaction levels of social presence. It was reviewed to qualitatively describe change in individual participants over time.

Qualitative Data

The art process was analyzed to measure the level of engagement. Observations were made and recorded in an observation log about how long participants spent working on the art, if they followed the prompt or improvised, if the participant shared and interacted with others about their image. The information was recorded in a checklist format for comparison. There was a space for researchers' comments as well. The researcher took a screenshot of each completed piece of expressive art to capture the participants' creative pieces when they shared. The art wasn't evaluated per say, however, it will be presented as examples of various levels of engagement in each participant. Comparisons were made over time to see if each participant's engagement changed and how the art corresponded with the level of engagement.

The researcher administered a Workshop Evaluation Survey at the end of the four-week program to gather information about each participant's user experience making art and participating in the group. The survey covered topics such as ease of access to art therapy treatment using zoom and satisfaction level with the art experience and facilitator. Question responses ranked from not satisfied to very satisfied, and there was an invitation to add comments. Answers were compared to all other measures of social presence and engagement to see if there was a correlation.

Risks

This study asked participants to engage in art activities designed to get them to think about their feelings about themselves. They might have found this distressing if they were in a negative emotional state or if they usually avoid thinking about how they feel because they do not know how to manage their emotions. People with ABI may experience frustration easily and the groups were conducted at a slow pace, making sure each participant fully understood each step in the group. Individuals were reminded that they could withdraw from taking part in this study at any time if they did not feel comfortable with the risks and that they could withdraw without fear of negative consequences. The researcher made it clear that they were free to withdraw at any time without any negative repercussions. If they felt upset during or following completion of a session, they would have been referred to the resource specialist at the Schurig Center. In order to protect the participants from risk, the debriefing statement included contact information for emergency and non-emergency referrals (appendix E). However, the purpose of the art interventions in this study was to support and encourage values-based connection with others, consequently, adverse emotional reactions were not anticipated.

Benefits

Gaps in ongoing post-acute treatments have been documented (Fleminger & Ponsford, 2005). This study examined the treatment option, delivering art therapy via Zoom to individuals in

the ABI chronic phase. The research will help contribute to the literature pertaining to using technology to reduce obstacles to access interventions. There are individual and community benefits in providing psychosocial services for vulnerable individuals who cannot obtain them on-site because of COVID-19.

The data collected from the individuals in this research study will contribute to the care treatment options and the wellbeing of others who have acquired brain injuries. The knowledge gained from their participation will be used to improve treatment for others with ABI. Individuals in the study had access to art experiential experiences that are not yet widely available. The involvement in this study might have helped participants take an active role in their sense of wellbeing and helped combat feelings that might be causing dissatisfaction. Because the study was conducted in a group, participants had the opportunity to build a peer support group and improve social participation.

Protection of Human Participants

This researcher ensured that participants were treated well and that their safety and wellbeing were respected. Every effort was made in this research study to follow informed consent and confidentiality procedures in order to protect the participants involved. Compliance with the American Psychological Association, Art Therapy Credential Board guidelines, and Notre Dame de Namur University Institutional Review Board were followed. The research proposal was submitted to the Institutional Review Board of NDNU for approval before the research was conducted. Participants could have elected to withdraw from the study at any time, and data obtained from participation in the study could be withheld as well. Withdrawal would not have impacted any other activities associated with the center from which they had been recruited. Nor would it have affected any relationships within the center or with the researcher. All research information was used for

research purposes only. The researcher will keep all artwork and testing information for up to seven years before destroying the collected data, including artwork.

Conclusion

This chapter reviewed the methods used in this study to support individuals with acquired brain injury. The following chapter will describe the outcome and results of the study

Results

This research project sought to investigate if experienced co-presence, psychological involvement, and behavioral engagement played a role in the effectiveness of providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing, with individuals experiencing persistent impairments due to an acquired brain injury. It was hypothesized that during online, group ACT art therapy sessions, participants would experience co-presence, psychological involvement, and behavioral engagement as assessed by multiple reporting measures. This chapter will review the findings from the Zoom Art therapy program's data, the research is focused on adults in the chronic phase of ABI with a mild to medium range of cognitive impairment. However, within the inclusion criteria, there existed diversity in the participants' cognitive and communication abilities.

The study was conducted over four consecutive weeks, one session per week. In the group, participants created an image based on an art directive aligned with ACT therapy. They were invited to share their images, followed by the opportunity to talk about their experiences and feelings. Participants had a half-hour to work on art.

The researcher kept an observation log, recording observations of the participant interactions and engagements during the sessions, noting participants' demeanor while responding to the prompt by creating imagery and sharing their images, thoughts, and reflections. Each session concluded with an online survey, Networked Minds Social Presence Inventory.

Upon completing the four-week art therapy group, participants filled out a satisfaction survey relating to the overall experience of using Zoom to participate in group Art therapy. When delivering Art Therapy interventions to this population via Zoom, cultivating the sense of psychological and emotional connection despite the physical disconnection became an essential factor; it played an important role in the level of engagement and sense of satisfaction of the

treatment. I hope to invite further investigation into this important aspect of providing art therapy treatment to widen the ability for people with ABI to gain access to valuable interventions. This next section describes the results based on the various data points collected.

Demographic Information

The participants in this research study include seven adult women with chronic stage ABI who had contacted a nonprofit organization in the San Francisco Bay area for recovery from brain injury. The mean average age of the participants was 51 years old, with a range between 41 and 77. Six participants had never participated in art therapy before. One had engaged in art therapy previously. Some of the participants got ABI from concussion ($n = 1$), stroke, ($n = 3$), injury while traveling ($n = 1$). The other two were for unknown reasons.

Observation log

The research also considered the degree to which the participants engaged in the experience of the zoom art therapy process. An observation log was used to track levels of engagement during the sessions. The researcher tracked physical and verbal cues that indicated attentive, interested, participating, and listening behavior. The researcher also recorded the group dynamics and interactions with other group members. The researcher noted whether or not participants responded with awareness, acceptance, understanding, and appreciation of other group members through words or actions when expressing themselves or giving feedback and if consideration of other group members' feelings and experiences was displayed. Researcher reactions and observations made during session to intervention were recorded narratively and analyzed to find patterns of behavior or reoccurring themes.

Art Process

During the session, the participants created images that they shared with other members of the group. The question was best answered by analyzing the images and the participants' process of

making and sharing the art. The resulting images, along with the participant's explanation of the represented feelings and thoughts, demonstrated the level of engagement in a few ways. The first was the connection to the overall theme presented in the session, and more specifically, did the image connect in any way to the prompt. Secondly, the development of the connection to other group members was explored through the sharing of the art as a further indication of engagement and social presence. Thirdly, the image development was explored over time to understand if/how they changed in affect and expressiveness. Finally, time spent creating the images was documented to further understand engagement level.

Surveys

Two self-report instruments were administered. The Networked Minds Inventory was administered weekly through Survey Monkey to measure the construct of social presence. Networked Minds was used to detect social presence markers and to ascertain the degree in which participants felt the sense of having a shared group experience on Zoom, as if in actual presence with each other. The ten-question survey included questions about feeling listened to, heard and understood. The survey measured participants' awareness to see if they were aware of others or thought others were aware of them. They were asked both verbally and, in the email, to respond to the survey as soon as possible while the experience of the session was still fresh in their minds. The Workshop Evaluation Survey was administered to gather information about each participant's experience making art and participating in the group rating their overall experience. The survey was non-standardized; it gathered participants' responses to questions about the ease of access to art therapy treatment using zoom and satisfaction level with the art experience and facilitator.

Report of Findings

This next section reports the findings of the three research questions related to their engagement in the group.

Research Question One

The first research question was: *Is the art therapy online group well-tolerated by participants? This will be assessed by attrition rates and by a follow-up questionnaire and tracking attrition from the group.* A layered approach was utilized to answer this question with multiple points of data included. The data used to answer this question was: attrition, communication between participant and researcher, personal/out of ordinary communication, and self-report of satisfaction.

Attrition. Attrition in the four-week study was defined by dropping out of the group because a participant indicated that they had some issue or problem with the Zoom art therapy group as opposed to missing a session due to a medical issue, a common occurrence in individuals with an ABI. Attrition was tracked in the researcher's observation log by noting absences, late arrival, and early departure. Of the eight participants, four of the participants attended every session, two of the participants attended three sessions, and one participant came to two sessions. The researcher made distinctions between absence with no contact and absence where the participant contacted the researcher. Contact outside the weekly group was tracked and noted in the researcher's observation log, focusing on the primary mode of communication.

Communication. The researcher established robust communication with the participants from the onset of the study. Email was the primary mode of communication outside of the group, followed by text and occasionally phone beginning with the orientation period and ending with the debriefing at the end of the study.

Weekly emails with the Zoom link were sent the Thursday before each Saturday's scheduled session. Directly after each group meeting, a survey completion request email was sent. It contained the link to the Networked Mind Inventory. Additionally, another email was sent to follow up on Monday's and requested participants who hadn't sent a photo of their images to send it. The researcher also gave them an optional weekly art task. In total, the mean amount of emails sent from the researcher to the participants was 25. The participants were idiosyncratic in response to emails, the person with the least emailed three times, the person with the most 37. Three of the participants barely responded to the emails. These participants did not miss any of the weekly sessions. Two of those individuals had assistance getting set up on Zoom and also had help using email. It was unclear if the email response / or no response was connected to the individual's feelings about the group or connected to the difficulty of using technology.

Unusual Communication. Three participants each had at least one out-of-ordinary email interaction, initiating a topic outside of the researcher's email or sharing something about thoughts, feeling, or medical conditions. These participants communicated to the researcher about absences or timing issues such as needing to come to the group late or leave a little early.

The one participant with the most absences (2) communicated with the researcher by email, but not about absences unless asked. The combination of effort put into communication and the active level of participation in the weekly sessions indicate that group art therapy provided in an online environment was well-tolerated by the participants.

Satisfaction. The results from the Workshop Evaluation Survey administered at the end of the study, completed by four participants, further indicate a high level of tolerance for an online experience of group art therapy. The 10-question survey asked about participant user experience and satisfaction level of the four-week art therapy program. 100% responded

"very satisfied" to these questions. How satisfied were you using Zoom to participate in the therapeutic art group? Did this art therapy experience meet your expectations? How likely are you to attend another therapeutic art group accessed by Zoom? Further confirmation of the effectiveness and high toleration of art therapy provided using Zoom is that one of the participants followed through on How likely are you to attend another therapeutic art group accessed by Zoom? by joining a Zoom art therapy group facilitated by the center that provided support for this study.

Summary. The first question was "*Is the art therapy online group well-tolerated by participants?*"

This was assessed by attrition rates and by a follow-up questionnaire and tracking attrition from the group". The data used to answer this question were attrition, communication between participant and researcher, personal/out of ordinary communication, and self-report of satisfaction. Based on the data presented, this researcher can conclude that indeed the online group was well-tolerated by the participants.

Research Question Two

The second research question was: What does the art process look like for individuals during sessions of higher engagement versus sessions of lower engagement? The data used to answer this question was: art products that they completed as part of the group. The images were a product of the therapeutic process. As such, the images were not divorced from the larger context of the process to assess engagement. The art pieces did not undergo content analysis. A layered approach was again utilized to answer this question with multiple points of art data included. In participant imagery individual factors in the art process were always a factor to consider (See Consideration of Participants' Response to Art Directive Two).

Consideration of Participants' Response to Art Directive Two, "Interpreting feelings".

The art was looked at in relation to the following factors: the usage of art material provided, the relationship of the participant's art to the assigned theme, individual factors in the art process, time, and impact of group process on individuals. Names provided with the images are pseudonyms. Images were created by the participants and shared with consent.

Figure 1 Cee's image



Figure 2 Ro's image

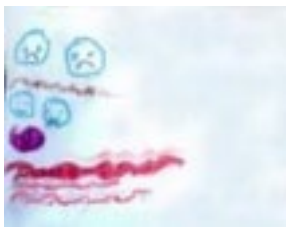


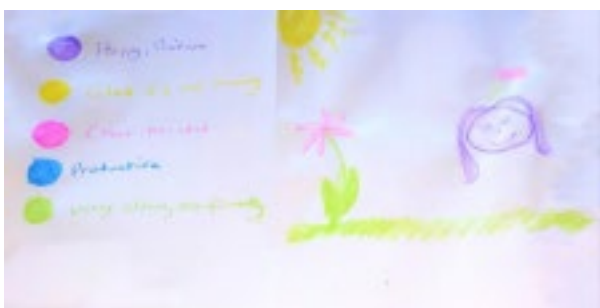
Figure 3 Kay's image



Figure 4 Mi's image



Figure 5 Kee's image



Each individual in the group demonstrated engagement in the image creation portion of the sessions. The elements of the therapeutic process consisted of discussion about a theme consistent with ACT therapy, time to create a response to a given theme, and sharing. To record the resulting image for the study, the researcher took screenshots of the images and requested that participants send a photograph of their images via email. Three participants responded to the request to send a photo of their image consistently. The rest of the participants did not consistently respond to the request to send a photo of their image. This section includes a discussion of art material provided, the relationship of the participant's art to the assigned theme, individual factors in the art process, time, and impact of group process on individuals.

Art materials The participants were instructed to use any materials from the kit provided, which had several sheets of 12x18 white paper folded in half, forming a booklet of pages 9x12, water-soluble oil pastels, watercolor pencils, magic markers and a paintbrush with basic instructions on usage. The participants received no special instructions on how to

use the materials. The researcher considered experimentation a signal of interest in and increasing comfort with the art materials. Three of the participants experimented with the materials by adding water to the water-soluble pencils or pastels. The rest of the participants stuck with the same tools throughout the study and did little experimentation.

Relationship to the theme. The researcher considered whether or not a group member's image coincided with the given theme as a sign of engagement. Analyzing the artwork for connection to the theme gave information on how closely the participants engaged in the portion of the session before image creation. Themes introduced by the researcher by way of prompts were not always observable by looking at the images. Two individuals had a pattern of loosely adhering to the prompt, connecting the images to the topic when further questioned by the researcher. The other five members of the group addressed the prompt more directly. When the participant included words in the image, it provided a way to identify if the prompt was being addressed. The words themselves were not a sign of engagement but served as a visual confirmation of the meaning behind the imagery. One participant never added words. One participant added words to every image. Three routinely added words but not on every image. Two added words to only one image. The alternate way to confirm the connection to the theme of the session was verbal. When discussing imagery, the participants were almost always on topic. Changes occurred, increased detail, and personal sharing developed as the group identity formed.

Individual factors in the art process. Lack of engagement was not the only reason for not adhering to a directive. Attention and memory issues are a common occurrence for individuals with ABI and can affect the capabilities of fulfilling a task. All of the participants in this study experienced some degree of difficulty with attention and memory. For example,

one prompt was to create an image around values. A participant shared that she had forgotten what the prompt was but created an image depicting the word beach. Creating the image, she remained engaged with the task as best she could. When asked about how that related to values, the participant stated that the beach represents an important place.

Further details emerged when sharing, such as a friend taking her and the importance of peace and quiet, solitude. In discussion, she articulated that friendship was important to her and that the beach offered a respite from overstimulation. Her articulation demonstrated that she had listened to and absorbed the contents of the first half of the group session.

There was a wide range in both skills using art material and in comfort level expressing themselves visually. Many of the images were completely abstract. All but one of the participants had never participated in art therapy before. Participant remarks relating to creating imagery both before and after image tasks indicated some judgment about art skills. One participant was extremely comfortable expressing herself using imagery, and a majority of the rest of the group were in the middle range, neither uncomfortable nor extremely comfortable. One participant routinely put down the images she created, speaking disparagingly about the imagery. The lack or presence of comfort, skill, or judgment does not appear to be connected to engagement. The most comfortable and least judgmental participant created one less piece of art (total equal five images) than the most uncomfortable and the most judgmental of the group (total equal six images).

The average number of images created was four pieces. The number of art pieces created during the duration of the study includes an optional weekly invitation to create an image out of the group. The researcher invited the participants by email to challenge themselves to create an image based on taking stock of how they were feeling or what was on their minds during the week. Three participants created images out of the group, with one participant doing so every week. Out-of-group artwork demonstrated a high level of engagement and commitment to the work of the group.

Time. The researcher also considered the amount of time the participants spent on the image as a marker of engagement. Participants had at least thirty minutes to complete the image. The researcher noted the amount of time spent creating the image in the observation log, making comparisons within the group. There was no set norm for timing. Each participant had a unique pacing pattern. The notation for timing on finishing was early, middle, or late. Some participants demonstrated shorter attention spans due to their ABI and consistently finished sooner than the other participants with a longer attention span. The average amount of time spent was 25 minutes. One participant consistently was the last to finish. Deviation in timing patterns was compared with other indicators of engagement. It does not appear that timing is connected to engagement.

Impact of group process on individuals. Sharing artwork generated from the sessions gave information on how closely the participants engaged in the portion of the session about processing and communicating thoughts and feelings. Each individual's image was highly personal and the meaning behind the imagery was not always apparent by looking at the image (see Sampling of Participants Images). Additionally, sharing provided a source of information about the amount of social presence felt by participants.

Sampling of Participants' Images.

Participant description and explanation of their art provided context and meaning for the other group members viewing the imagery. Sharing contributed to the growing sense of group development.

Figure 6 Cee's image



Figure 7 Jay's image



Figure 8 Mi's image



Figure 9 Ro's image

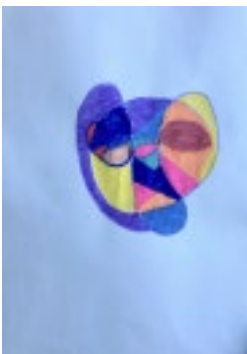


Figure 10 Kee's image



Figure 11 Kay's image

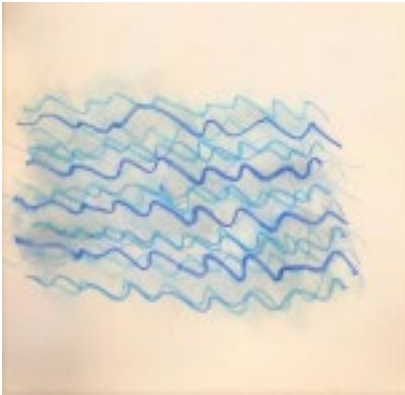


Figure 12 Pi's image



Sharing had two components. Firstly, after creating the image, each participant shared their perspective of what the image was about. Secondly, sharing included listening and supporting the other group members when they were sharing. Attention and participation signaled engagement. During the sharing portion, all of the participants received supportive comments from other group members. The comments connected to the image and what the individual had said about the image, thus demonstrating a high degree of listening for understanding. Social presence was demonstrated

by the degree to which the group members empathized and engaged with each other during the sharing process.

The group displayed a strong sense of empathy for each other that grew as the group dynamic solidified. Tracking changes in the expression of emotional content indicates/ demonstrates a sense of trust and safety is building or not building in the group. Comparisons were made of each individual's images to see if the images changed over the four-week sessions regarding the expression of emotional content and exploration of the given topic. Comparisons over the progression of the sessions revealed that the individual participants' artwork remained relatively consistent in style throughout the four weeks of the study, while the quality of the contributions got more personal and invested in the other members of the group. For example, one participant used these words to describe her image "sad, pain, different, frustrated, shame. wavy, red." Another participant shared how brave she thought the other participant was to bring up shame and that she had trouble feeling that way and expressing it. Participants pointed out to other group members indicators of growth or pointed out positive attributes of other group members.

Summary. The second question was, *"What does the art process look like for individuals during sessions of higher engagement versus sessions of lower engagement?"*.

The data used to answer this question was art products that they completed as part of the group. Art was looked at in relation to the following factors: the usage of art material provided, the relationship of the participant's art to the assigned theme, individual factors in the art process, time, and impact of group process on individuals. Based on the data presented, this researcher can conclude that the art process component-time did not indicate high or low levels of engagement. Experimentation with the provided art materials did indicate a high level of engagement for the individuals who engaged in material exploration. Non-experimentation did not indicate a lower level of engagement. Data suggests that the relationship of the participant's art to the assigned

theme, individual factors in the art process, and the impact of group process on individuals indicated an overall high level of engagement for all of the participants.

Research Question Three

The third question asked: *Does experienced co-presence, psychological involvement, and behavioral engagement play a role in the effectiveness of providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to individuals with persistent impairments due to an acquired brain injury?*

Multiple points of data were utilized to answer this question. The data used to answer this question was: group members' interaction with technology, the impact of teleconferencing on responsiveness to ACT-aligned art directives, and Zoom's effect on the development of a sense of group. The data collected to address this specific question included: Observation, Networked Mind Inventory, Workshop Evaluation Survey, participant comments and feedback in session, sharing the art in the discussion.

Interaction with technology

Participants were questioned about their use of the teleconferencing platform Zoom prior to the beginning of the study as part of the demographic information collected. All of the participants self-reported that they had experience using Zoom. Three of the participants required assistance from someone in their household to log on to the platform. This accommodation was allowed from the onset of the study. All of the participants were capable of using zoom independently once they were logged in and set up. There was a range of experience and comfort levels using Zoom. Three individuals used the platform independently and frequently for work, online classes, or sessions with other care providers. The other four participants ranged in usage from occasionally to hardly at all. Regardless of the level of experience or comfort using Zoom, there didn't appear to be a difference in engagement patterns between the participants related to Zoom. The researcher did

observe that the individuals who needed assistance with zoom were less likely to connect via email, and participants who were more comfortable had a higher level of engagement via email; this did not translate to a discernible difference within the group process.

The researchers also noted Zoom-related practices that might have impacted the ability to fully engage in the group art therapy process in the observation log. The researcher noted if the participant had assistance navigating zoom issues such as muting and unmuting, following zoom etiquette such as following the group negotiated rules about being on or off-camera, generating off-topic noise, or doing distracting activities while in the zoom meeting. None of the participants had any major impediment using zoom technically, given that accommodations were made for individuals who had issues in this regard. Nor were there any problems following zoom etiquette. Distraction was an issue for two of the participants. Distractions included other individuals entering the space and interacting with the participant, use of cell phones during a session, and interruptions by pets. Distraction impacted the engagement of one of the participants but not the other. The researcher noted that one of the participants was interrupted by the distractions, while the other participant initiated the distractions. This seems to be the explanation for the difference in impact on engagement.

Four of the participants responded to the Workshop Evaluation Survey. On the self-reported measure, how satisfied were you using zoom to participate in the therapeutic art group 100% responded very satisfied. 100% responded "very satisfied" to how satisfied you are with the group sharing interaction experience in the therapeutic art group access by Zoom. For the question, How likely are you to attend another therapeutic art group accessed by zoom? 50% said "satisfied", 50% said "very satisfied". The written responses to the question, How easy was it for you to do art therapy over zoom? "I'm happy with Zoom art therapy and think it was a good class, and it was easy for me to do the art." "It was easy." "Very helpful having material sent. Easy" "Absolutely... It was

so easy and fun to use Zoom. Thanks!" From these findings, the researcher concluded that Zoom is an effective platform to provide group art therapy for individuals with ABI.

Teleconferencing impact on responsiveness to ACT aligned art directives In considering participants' responsiveness to ACT-aligned art directives, the directive was considered effective and not impeded by conducting the session via Zoom if the researcher observed a connection between the topics presented and interest and engagement demonstrated by the group members. ACT-aligned art directives were considered effective and not impeded by conducting the session via Zoom if it facilitated interactive group dynamics and interactions between group members. ACT-aligned art directives were considered effective if individuals reported feeling better after engaging in them.

Participants were tasked each week with responding to an ACT-aligned art directive. The week one prompt was, create an image depicting yourself and what is most important to you. Week two participants were instructed to use mindfulness to become aware of their present feelings and to create an image using color and shape to represent them. For week three, the task was to create an image based on what you value and makes you thrive. In the last session, the prompt was a response to the quote "Do more of what matters" the participants were asked to create an image and to come up with one do-able action.

Observable Indicators that the ACT-aligned art directive was effective were noted in the researcher's observation log. The researcher observed levels of engagement to the art therapy directives throughout the sessions. Specifically, tracking interest, attention, flow, and presence. Two participants demonstrated above-average interest in the Act-aligned directives by creating images for the outside of group bonus directive sent mid-week via email. One participant demonstrated a lower than average interest by missing two sessions, one of which the stated reason was that last-minute family time superseded the session.

Furthermore, interest was signaled in how thoughts and feelings provoked by the directives were connected with and discussed in the group. Every present member of the group participated in sharing their image and connected it to the week's topic. Each group member demonstrated an ability to connect the image to some insight into thoughts and feelings they were having about their life. There was a range of awareness of this process. Three members of the group made comments such as "the assignment helped me to recognize my emotional state" Two members were less connected to the process and didn't seem to connect the prompt to a change of perspective. This variation could be attributed to the differences in participants ABI related cognitive-communication issues. Attention was noted in the observation log by tracking distractions and noting how much time was spent creating the image response to the directive. Neither of these methods was helpful as individuals with ABI have individual attention spans that do not necessarily reflect the interest or effectiveness of the task at hand. As discussed in previous questions, attention ranges varied greatly within the group.

Another way to gauge if Zoom was effective or impeded the effectiveness of delivering ACT-aligned art directives was to consider if it facilitated interactive group dynamics and interactions between group members. All of the individuals in the group were highly participatory and demonstrated interest and support for the other group members. The researcher noted in the observation log that as the group developed over the weeks when one participant demonstrated empathy or support towards another participant sharing of issues that were brought up by discussing the image response to the ACT inspired prompt, it echoed throughout the group, thus sparking deeper and more meaningful sharing.

The participant reported feedback was recorded in the observation log, Workshop Evaluation Survey, and the Networked Mind Inventory. When directly asked in the Workshop Evaluation Survey at the end of the study, "How satisfied were you with the content of the

therapeutic art group accessed by Zoom" and "How satisfied were you with the content of the therapeutic art group accessed by Zoom", 100% the group members who responded (four participants) reported that they were very satisfied. Spontaneous reflection during session time demonstrated that participants were experiencing insights from the art therapy prompts. Individuals would say things during sessions such as "I felt sick during the week, I did some art, it feels good to be here" and "this is a teaching moment, now I can see what it looks like when I beat myself up" these self-reported responses strongly suggest that the ACT inspired art directives were effectively delivered via zoom.

Zoom's effect on development of sense of group

The researcher utilized the self-reported Networked Mind Inventory (Harms & Biocca, 2004) to examine participants' level of social presence and their perceptions of immediacy, affinity, and sense of group cohesion. Participants were asked to take the survey after each session. An email with the survey link on Survey Monkey was sent immediately following the close of the group. Response rates varied on the Networked Mind Inventory, and there was a decrease in responses over time. During the first week, seven individuals completed the survey. In the second week, four completed the survey. In the third week, five completed it. In the last week, only two participants completed the survey.

Of those who responded, the answers to the ten questions on the Networked Mind Inventory remained consistent over the course of the sessions. The participants agreed or highly agreed that they felt as if they were aware of the other group members, paid close attention to other group members, and felt understood by other group members. Participants overwhelmingly disagreed or strongly disagreed with the statement, "I think the other group members felt as if we were in different places rather than together." These results indicate that the group members experienced a

high level of social presence and felt it was possible to have interactive group dynamics and interactions between group members while experiencing ACT-aligned art therapy.

Observational Data

Researcher observations about participant's sense of social presence included the emails mentioned previously. Additional evidence includes the group spontaneously agreeing to share contact information so they could talk with one another outside of the group. Other observed moments which might indicate social presence and group cohesion included spontaneous expressions of support after a group member revealed something vulnerable in their art process. For example, one member said, "Here is my art, but I think I did it wrong. I often mess up instructions, even when I ask for help." In that example, each of the other group members responded with comments such as, "I do that too" and "I can relate to that - I'm glad you shared that."

Summary. The third question was: *Does experienced co-presence, psychological involvement, and behavioral engagement play a role in the effectiveness of providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to individuals with persistent impairments due to an acquired brain injury?*

This question was addressed through multiple data points, including interaction with technology, Teleconferencing impact on responsiveness to ACT aligned art directives, Zoom's effect on the development of a sense of group, and observational data. Each of these areas contributed to our understanding of group Acceptance and Commitment Art Therapy sessions delivered via video conferencing. This question related to the online delivery of group therapy and how the online platform impacted services. Specifically, the approach was demonstrated effective in providing support to individuals with persistent impairments due to an acquired brain injury. Members were indeed able to create meaningful social connections and gain therapeutic insights over the online platform.

Conclusion

This chapter reviewed the results of the study to address the impact of delivering group Acceptance and Commitment Art Therapy sessions via video conferencing to individuals experiencing persistent impairments due to an acquired brain injury. Specifically, the study sought to understand the role that experienced co-presence, psychological involvement, and behavioral engagement had on the effectiveness of the treatment. The results indicate that participants experienced co-presence, psychological involvement, and behavioral engagement in an online environment. Furthermore, participant self-reported measures indicate that there was a high degree of satisfaction and perceived effectiveness of the treatment.

Discussion

This study investigated if/how group Acceptance and Commitment Art Therapy sessions were effective when delivered via video conferencing. The study sought to understand if experienced co-presence, psychological involvement, and behavioral engagement are impactful on the effectiveness of delivering the art therapy sessions to individuals who have experienced an ABI with persistent impairments due to an acquired brain injury. The researcher gathered data to answer these questions: *Is the art therapy online group well-tolerated by participants? What does the art process look like for individuals during sessions of higher engagement versus sessions of lower engagement? Does group Acceptance and Commitment Art Therapy sessions delivered via video conferencing effectively provide support to individuals with persistent impairments due to an acquired brain injury? Does experienced co-presence, psychological involvement, and behavioral engagement play a role in the effectiveness of providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to individuals with persistent impairments due to an acquired brain injury?*

Summary of Findings

This study used qualitative methods with quantitative features to understand participants' experiences. The use of multiple data collection methods yielded more comprehensive results allowing for multiple avenues of information to answer the question of whether or not using video conferencing to deliver art therapy had an impact on the effectiveness was assessed by measuring levels of engagement and social presence to attendance /attrition rates as well as the degree of satisfaction the participants reported.

Is the art therapy online group well-tolerated by participants?

The researcher observed that the online art therapy group was well tolerated by the individuals who participated in the study. There was zero attrition from the four-week study as

defined by dropping out of the group because they indicated that they had some issue or problem with the Zoom art therapy group. As indicated in the results section, there were a few absences. Individuals that missed a session were asked what prevented them from joining. The most common reason was health-related issues connected to having an ABI. Missing participants demonstrated their continued interest in the group by the following actions; continued interaction via email or phone, doing art therapy prompts outside of the group, showing up ready to participate in a session following an absence, and a self-reported Workshop Evaluation Survey about the user experience and satisfaction with the Zoom delivered Acceptance and Commitment Art Therapy group.

Email communication was one of the strong indicators of tolerance. It provided another platform for the participants to self-report on their experience in the group and allowed the individuals to voice any concerns they had about the process of engaging in a Zoom art therapy group. Because of email communication, the researcher was able to have week-by-week insights that were not instigated by predetermined questioning, thus allowing participants a self-determined opportunity to share what was most important to them about the goings-on in the group. Previous research has demonstrated the importance of gaining perspectives directly from individuals experiencing ABI and other chronic conditions finding the direct feedback meaningful. Arguably both assessed and perceived needs should be evaluated to develop and provide useful services. (McKevitt et al., 2011). Individuals with ABI, their advocates, and the professionals involved in care all benefit from a clearer understanding of needs generated from self-reported qualitative data.

Looking at who drops out was the main indicator of tolerance, but another way to look at tolerance levels is how many in the group went deeper, shared more, and made connections with others in the group. The researcher didn't directly measure tolerance in this way, but in addressing the question of engagement vs. lack of engagement, the researcher documented the development of a group dynamic that fostered more investment into the art therapy process. If the process were not

well tolerated, the individuals would have stopped fully engaging with the process and each other. It was documented that as the group went on, with all of the individuals in the group, participation got richer.

Finally, tolerance is indicated for participants who had a satisfactory experience in the Zoom art therapy group. As was detailed in the results section of this paper, the Workshop Evaluation, a self-reported satisfaction survey, directly asked participants to rate their experience of using Zoom to participate in an Acceptance and Commitment Therapy (ACT) art therapy group. The individuals who completed the survey all reported a high degree of satisfaction with the art therapy group. A high-level demonstration of tolerance is to seek out further treatment post-study. This would seem to indicate both a high level of satisfaction in the treatment process and the outcomes. Although this research study did not formally track participants' post-study art therapy plans, one of the participants shared with the group that to provide continuity of the support; she had signed up for another art therapy group to continue doing the work because she felt as if she was benefiting from the process.

What does the art process look like for individuals during sessions of higher engagement versus sessions of lower engagement?

Client engagement is an essential yet challenging ingredient in effective therapy. Engaged clients are more likely to bond with therapists and counselors, endorse treatment goals, participate to a greater degree, remain in treatment longer, and report higher levels of satisfaction (Thompson, et al., 2007). Given the importance of engagement in the effectiveness of treatment, coupled with the perceived difficulty of cultivating it in an online line environment using video conferencing with individuals with ABI, this study sought to determine if levels of engagement and social presence were detectable through the art process. Engagement and social presence are constructs that are multifaceted. The construct of engagement involves emotional, cognitive, and behavioral aspects

(Short, C. E., et al., 2018). Identifiers of positive therapeutic engagement during the art process in this study encompass these constructs: interest, attention, affect, immersion, intervention usage, and presence. The art process consisted of a discussion of an ACT-aligned theme, creating an image based on the discussion, and group sharing after the image was completed. Presence, as it relates to this study, is specifically tied to having communication being mediated through video conferencing and therefore measured perceptions of mediated communication in relation to the impact on participants' connection to the therapist and the other group members. The use of overlapping observation and feedback was necessary to overcome the obstacle of finding a way to describe each individual's unique capacity to engage and relate to others in a meaningful way. Individual factors played a part in the art process in group sessions. The individuals in this study demonstrated levels of engagement in idiosyncratic ways during the three-part art process. Participants had different levels of experience and comfort levels around making art. The individuals in the group ranged in the way that their brain injury impacted their memory, cognition, social and communication abilities. Some had medical issues that affected the way that they participated in a session. For example, two of the participants sometimes cited migraines as a reason to spend part of the session time off-camera. This made direct observation of visual cues that would indicate attention and engagement not possible. Nonetheless, those two participants demonstrated engagement in the way that they responded to the art process. Their work creating an image was in alignment with the theme. They frequently popped on camera to join the discussion (sometimes staying on camera for the rest of the session), and in comments to others in the group, they exhibited that they had been listening carefully. It appears from this study that visual cues of engagement are less important than participatory, interactive cues. The data suggest that individual factors did not impede the ability to engage in the art process during this study.

The relationship of the participant's art to the assigned theme and the impact of the group process on individuals were interactive components of art processes that involved connecting to the researcher, connecting to themselves, or connecting with the other members of the group. During the study, all of the participants demonstrated increasing levels of personal sharing through connecting to the weekly theme and increased contribution to the group community by empathetic listening and support of each other when sharing images. These factors were good indicators of an individual's level of engagement and social presence. The data collected indicates an overall high level of both for all of the participants.

Exploration with the provided art materials did correlate with a high level of engagement for a few of the participants, but it also could have been interpreted as a higher degree of comfort with the art process in general or more familiarity with the art tools. Other interpretations about the choices of art materials are possible. The data collected from this study indicates that the art materials chosen were not significant indicators of engagement, nor did they promote or detract from the level of social presence participants were experiencing. The art materials chosen may indicate on what level of the ETC the participant is functioning (Hinz, 2009).

Does group Acceptance and Commitment Art Therapy sessions delivered via video conferencing effectively provide support to individuals with persistent impairments due to an acquired brain injury?

It has been well documented in research that there is a need for individuals who have experienced an ABI and are considered to be in the chronic stage of the condition to continue psychosocial support (Teasell et al., 2007). After graduating from traditional acute care rehabilitation, access to targeted, evidence-based therapy can help keep the recovery going, maintain adjustment to daily living, and facilitate further integration within their family and community. Past research has shown that art therapy helps sort out difficult feelings that can arise

from living with an ongoing chronic ABI condition (Kline, 2016). Therefore, it is important to create programs that meet the needs of individuals with ABI that are evidence-based, accessible, and well-tolerated. In line with previous studies regarding individuals in chronic stage ABI access to care, providing services during Covid-19 has further exacerbated the difficulties in getting therapy to individuals with an ABI who are too vulnerable to meet in person. In regard to the online delivery of group therapy and how the online platform impacted services, this research provides a counter perspective to the conventional thinking that individuals who have varying degrees of impairment affecting memory and learning, as well as the ability to select, acquire, classify and integrate information, will have difficulty experiencing engagement if not in a face to face environment. The individuals in this study created meaningful social connections with each other and gained therapeutic insights over the online platform. Participants demonstrated that they experienced engagement and social presence in many different ways while participating in group Acceptance and Commitment Art Therapy sessions delivered via video conferencing. These findings support the researcher's hypothesis that during online, group ACT art therapy sessions, participants would experience co-presence, psychological involvement, and behavioral engagement.

Further evidence of the efficacy of group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to support individuals with an ABI is this study's findings. The treatment was not only well-tolerated, but the participants self-reported a high degree of satisfaction with the process.

Strengths

A strength of the present study was its mixed methods approach. It employed qualitative methods with quantitative features to understand participants' experiences. The use of multiple data collection methods yielded more comprehensive results allowing for multiple avenues of information. Self-reported responses from the participants with chronic ABI about their experience of participating in ACT-informed group art therapy via Zoom provided a more nuanced understanding of the effectiveness of the approach to meet the needs of this population. Observational data provided a perspective of functional outcomes for participants. The inclusion of surveys with fixed questions and answer parameters brought focus and some consistency to the study.

Social isolation during covid has been recognized as an issue for many people during the Covid-19 epidemic. It is especially true for individuals with ABI, for which social isolation is already an existing problem. Proctor & Best (2019) found that individuals with ABI who reported higher social loneliness also felt socially isolated. Providing an opportunity to develop a community with others with a brain injury to share similar lived experiences is one of the primary benefits of this study for the participants. In sessions, the group interaction in the art therapy process facilitated a normalization of their injuries, symptoms, and emotions. This researcher documented the successful development of the group dynamic during art therapy sessions. During a period where limited services and ongoing support are available, Zoom Art therapy can improve psychosocial outcomes for participants. Additionally, because remote group art therapy was demonstrated to be an effective way to provide group art therapy while sheltering in place because of Covid-19, it can be expected to be equally effective in other situations wherein access is limited. For example, access might be curtailed due to financial limitations, mobility restrictions, or geographic remoteness. To

underscore that point, one of the participants in the study lived in another state and stated that she had no programs in her geographic area to meet her therapeutic needs.

This research fills a void in current literature about ABI. It adds to the emerging body of research much-needed data on the effectiveness of using an online platform to provide ongoing psychosocial services to individuals with ABI. The outcome of this study suggests that it is feasible to provide evidence-based group art therapy sessions utilizing teleconferencing technology for individuals with chronic ABI. More specifically, the study shows that engagement and social presence can be cultivated remotely. These two states of mind have previously been identified in research to impact effective treatment.

Limitations

All data in this study was collected, interpreted, and analyzed solely by the researcher. Having another observer/interpreter might have provided more perspective and inter-rater reliability increasing the overall reliability of the conclusion.

A significant limitation in this study was the difficulty finding participants that met the criteria for the study. Working with a small nonprofit organization allowed the researcher to have access to their resources for recruiting. Still, the small organization had limited resources that were already stretched to the limit trying to continue providing services for their clients during Covid 19. As a result, the selection of participants was made using convenience sampling with a smaller than desired sample size of 7 participants. Additionally, there was no comparison group due to the limited pool of prospective participants. It is advisable for future studies of a larger scale to employ a control group to help establish whether the benefits observed in the Zoom Art therapy program equate to the benefits derived from the same program provided in an in-person format.

There was a fair amount of homogeneousness in gender, socioeconomics, and age range within the group. The lack of diversity in the group in these areas makes it hard to predict the

outcomes if the same study were done with a larger, more diverse group. The small sample size and lack of randomization indicate using caution in generalizing the results and limiting the conclusions drawn.

At the same time, as would be expected from previous research on brain injury, this group also exhibited heterogeneity. For instance, participants in this study ranged in the type of ABI, the severity of impairment, the individual's independence level, and generally how ABI affected their quality of life. Therefore, some of the inconsistencies would be expected to repeat in other groups with individuals with different presentations of ABI. Taking that into consideration, even with small sample size, the successful outcomes reported in this study present an arguable strength for the generalizability of these findings amongst individuals with acquired brain injury.

This study was additionally constrained by the lack of measuring tools and assessments specifically tailored for individuals with cognitive-communication issues that measure the constructs specific to this study, namely engagement and social presence. The observation log and surveys developed for the purposes of this study were not yet validated in this population.

When using tools intended for individuals who have not experienced an ABI, it was necessary to understand the limitations of the assessment. Although there are advantages of using self-report measures with individuals who have ABI, specifically gathering information from their perspective, there are limitations involved in self-report to consider. Individuals with a brain injury may have limited self-awareness or capacity for reflection which can affect the results of self-report measures. The Network Minds inventory requires a high level of abstract thinking which uses meta-cognition. A challenging task for those with cognitive impairments that compromise attention, working memory, information processing speed and/or executive dysfunction (Kangas, M., & McDonald, S., 2011). In this study, individuals with a more significant impairment that affects abstract thinking would answer the survey questions literally, creating distortions in the results of a

study. The researcher had to adapt by using multiple ways of measuring the participant's experiences.

Lastly, the heart of this research was to study the effects of mediating communication using technology to provide group Acceptance and Commitment Art Therapy sessions to support individuals with an ABI. Following a link to a survey or assessment delivered a lower response rate. This was evident when participants did not follow through with the self-reported measures, the Networked mind Inventory, and the Workshop Evaluation Survey. Given the small number of participants, this left a gap in the available data. Wherein email, phone, or Zoom interactions with participants with an exchange of communication between researcher and participant had a fairly high degree of responsiveness. The delivery of surveys or assessments via Survey Monkey outside of the group session proved to be less responded to and call into question the Construct validity of utilizing surveys or assessments that require independent follow through.

When utilizing technology as an intervention medium, barriers to access may exist for individuals with limited financial resources or technological capabilities. Many individuals with chronic ABI with long-term disabilities have significant issues limiting their finances. This study did not address the issues around providing computers, tablets, or internet service to individuals who did not have the resources, nor did the study address working with individuals who had a deficient level of computer proficiency.

A prerequisite for the study was access to the internet and the ability to utilize Zoom for the sessions leading to a sampling bias. In future studies, employing computer support suitable for individuals with cognitive impairments and low computer proficiency as well as creating a program to ensure that all participants possess necessary tablets, computers, or internet service will enable full participation for a wider group of individuals with chronic ABI.

Relationship to Current Literature

Acquired brain injury affects nearly 5.3 million people in the United States, many of whom live with long-term disability following their brain injury (TBI) (BIAA, 2014). Many ABI survivors do not and will not return to the status quo of their former lives (Teasell et al., 2007). Deficits, both physical and cognitive, occur after an ABI and can affect personality, behavior, impairment of cognition or memory. These changes impact psychosocial function and often result in significant changes in lifestyle or the ability to socialize at the same level as before the brain injury, leading to social isolation.

Acceptance and Commitment therapy and group art therapy have been shown to be efficacious for addressing generalized psychological distress, anxiety, depression, and psychosocial adjustment with individuals with ABI ((Heenan, 2006, Kangas & McDonald, 2011, Kline, 2016, Whiting et al., 2019). In addition, previous research has suggested that developing an active problem-focused coping style instead of a passive emotion-focused coping style predicts a higher quality of life in the long term (Wolters et al., 2010).

Despite the chronic nature of ABI, psychosocial interventions are hard to access for people living with the long-term conditions associated with ABI. Approximately three-quarters of people living with ABI feel that their psychological needs are unmet (McKevitt et al., 2011). Moreover, most existing studies do not take into consideration the persons with ABI perspectives regarding treatment options and the impact of their opinions on their care experience. There is a significant call in the literature to conduct research that considers the participant experience (Egan et al., 2006).

Barriers such as geography, limited or non-existent programs, financial limitations, and mobility issues make it harder to meet individuals with persistent ABI impairments therapeutic needs. At the time of this study, individuals cannot access services outside of their homes due to COVID-19. This researcher found limited research examining the feasibility of remotely delivering

group-based art therapy to individuals living with chronic ABI utilizing teleconferencing technology in their homes. Furthermore, previous research has not examined the effect of using telecommunication, a form of mediated communication, on engagement and social presence to provide ongoing psychosocial services to individuals living with persisting ABI impairments.

Clinical Application

It has been demonstrated in this study that it is possible to cultivate engagement and social presence when providing group Acceptance and Commitment Art Therapy sessions delivered via video conferencing to individuals with persistent impairments due to an acquired brain injury. Suggestions for implementing this intervention in a clinical setting fall into two categories, use of technology with individuals with ABI and Therapeutic approach and goals.

With regards to the use of technology to deliver treatment to individuals with ABI, possible barriers to accessing services have been identified in this study. The first possible barrier is the lack of technological tools (computer or tablet, and stable internet connection) needed to participate online. It is therefore suggested to source resources to provide tablets and internet service for group members in need before starting an online art therapy program for individuals with ABI. Providing necessary technology should be a priority for a program utilizing videoconferencing to Deliver ACT Art Therapy Interventions to avoid financial inequity to access to care.

Another suggestion regarding an art therapy program employing technology to deliver the intervention is to consider the participant's range in computer proficiency. Creating a program that has adaptations for individuals with ABI who have low computer proficiency due to cognitive impairments can be accommodated by giving them some extra training material or, if needed, a computer helper. This was a strategy successfully employed in this study.

An ongoing line of communication is an important aspect of creating a sense of connection. It is therefore recommended to have a scheduled pattern of interaction via email or phone to help group members remember group time and teleconferencing meeting log-in protocols.

In implementing art therapy as the therapeutic approach delivered via an online platform, it is important to consider the art supplies and how participants are going to use them. Each participant working in a home environment will have different levels of space and privacy. Thus, space and mess should be a consideration. The selection of water-soluble oil pastels, watercolor pencils, and magic markers as means of creating the images were selected for this study for that reason. Individuals will have different skill levels and comfort levels using art-making tools. This study provided art kits that allowed all participants to have equal access to several types of art material. Again, this approach ensured that there was equity and that economic issues weren't a barrier to access to service.

Lastly, a recommendation for implementing this type of program in a clinical setting would be to focus more on setting and meeting therapeutic outcome goals and integrating outcome measure collection within appointments. This suggestion can improve outcome measure completion and adherence, a remedy for the issue of missing data reported in this study.

Recommendations for future research

The present study points to a need for research to develop a consistent way to measure the constructs of engagement and social presence, considering individualistic variances in cognition in individuals with a brain injury. Future research endeavors should examine the interrelationships of engagement, social presence, user satisfaction to determine the impact on the effectiveness of a treatment in an online environment with individuals with an ABI. This study demonstrated that the sense of psychological and emotional connection in spite of the physical disconnection played an essential role in the level of engagement and sense of satisfaction of the treatment. I hope to invite

further investigation into this important aspect of providing art therapy treatment to widen the ability for people with ABI to gain access to valuable interventions.

Finally, there is a need for further research dedicated to pinpoint best practices to cultivate psychological and emotional connection online that specifically targets the needs of the ABI population. The study's outcomes could provide a blueprint to open the door to a future with more telemental health options available for individuals with an ABI in the chronic stages. They currently have few options to access psychosocial and mental health services.

Conclusion

An increasing body of research indicates that ABI should be considered a chronic condition (Borgen et al.,2020), indicating that it is not enough to focus all support services available to individuals who have experienced an ABI on recovery and rehabilitation.

Planning and providing effective support systems need to encompass the reality of access to care for individuals with an ABI. The Covid-19 pandemic has further exacerbated the reality that it is difficult for many to connect within-person treatment. Engagement is thought to be especially challenging in an online domain with individuals who have experienced an ABI given that it is common for their expressive functions through which information is communicated or acted upon to be impaired. Impairments that might create a barrier to effective participation and engagement.

The participants in this study were not prevented from having a positive experience taking part in a group-based Acceptance and Commitment Art Therapy program due to the online delivery. This study contributes to the growing evidence evaluating the effectiveness of providing online delivery of group-based Acceptance and Commitment Art Therapy interventions for individuals experiencing persistent impairments from chronic ABI. Given the shortage of ongoing, accessible resources for this population, these findings will help shape future therapeutic service delivery studies searching for optimal methods of ABI service delivery.

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Appendix A

Permission to Conduct Study

January 5, 2021

Patricia Gill

Executive Director Schurig Center for Brain Injury Recovery

1132 Magnolia Ave, Larkspur, CA 94939

RE: Permission to Conduct Research Study

Dear Patricia:

I am writing to request permission to conduct a research study with the help of your center. I am currently enrolled in the MA in Marriage & Family Therapy Program at Notre Dame de Namur University in Belmont, CA, and am in the process of writing my Master's Thesis. The study is entitled ZAP: Zoom Art Program With Adults Living With Acquired Brain Injury, The Effect of Using Videoconferencing to Deliver ACT Art Therapy Intervention.

I hope that you and the board will allow me to recruit 16 male and female adult clients with ABI from the center to participate in group Acceptance and Commitment Therapy (ACT) art therapy sessions delivered via Zoom. The individuals will be separated into two groups of eight people participating in four separate 90-minute sessions that occur once a week. Additionally, there will be phone or email communication to cover research project orientation, consent expectations and debriefing. Each session includes an art directive as well as specified assessments to measure the participant's level of engagement, social presence and satisfaction. The assessments will be:

1. Photos of Art. Photographs of participants' artwork will be taken to document work done by participants in the sessions.
2. Observation log. Observations of time spent working on the image, is the artwork on topic, can the participant share and engage with others about the image they created will also be reported in the log.
3. Net-worked Minds. The Net-worked Minds measure of social presence will be administered

to test social presence. The level of social presence as defined as a "sense of being with another in a mediated environment" social presence is the moment-to-moment awareness of co-presence of a mediated body and the sense of accessibility of the other being's psychological, emotional, and intentional states (Biocca and Harms, 2002).

4. Final evaluation. An evaluation survey will be given to participants to understand their subjective experience in the group. It will include four Likert items pertaining to the participant's level of like/dislike of using video conferencing to connect, the group sharing interaction experience, art interventions, art to facilitate communication.

I am requesting the Schurig Center for Brain Injury Recovery's involvement providing assistance in recruiting participants, rendering support in maintaining contact with the selected participants, providing referrals in the event of needed mental health support for participants. Interested clients who volunteer to participate, will be given a consent form to sign and return to the primary researcher before the beginning of the group ACT art therapy sessions delivered via Zoom starts (copy enclosed).

The survey results will be pooled for the thesis project and individual results of this study will remain absolutely confidential. Should this study be published, only pooled results will be documented. No costs will be incurred by the center or the individual participants. Your approval to conduct this study will be greatly appreciated. I will follow up with a telephone call next week and would be happy to answer any questions or concerns that you may have at that time. I can send you a copy of my application to the Institutional Review Board from Notre Dame de Namur University. You may contact me at my email address: ****@gmail.com

If you agree, kindly sign below and return the signed form in the enclosed self-addressed envelope. Alternatively, kindly submit a signed letter of permission on your institution's letterhead acknowledging your consent and permission for me to conduct this survey/study at your institution.

Sincerely,

Shari Weiser, Masters student/ researcher NDNU

Enclosures

cc: Dr. Sarah Kremer, Research Advisor, NDNU

Approved by:

Print your name and title here Signature Date

Appendix B

Networked Minds Social Presence Inventory

This study is to understand how using Zoom affects your experience of doing group art therapy.

When answering the following questions, please think about how you felt today when you used Zoom to participate in this group. Please Circle one response for each question:

1. I was aware of the other group members.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
2. I felt as if the other group members and I were in different places and not together.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
3. I think the other group members were aware of me.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
4. I think the other group members felt as if we were in different places rather than together.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree

5. I paid close attention to the other group members.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
6. I was sometimes influenced by the mood of the other group members.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
7. I was able to understand the other group members.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
8. I think the other group members paid close attention to me.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
9. I think the other group members were sometimes influenced by my mood
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree
10. I think the other group members were able to understand me.
 - Strongly Disagree
 - Disagree
 - Neither agree nor Disagree
 - Agree Strongly
 - Agree

Appendix C
Session Observation Log

Participant Number _____ Session Number _____

Interaction with Video Conferencing Technology

Definition: Degree in which participant was able to use Zoom

Affect

Definition: Participants overall demeanor

Attention

Definition: the concentration of awareness of the group's activity to the exclusion of other stimuli.

Engagement, Interactivity and Connectedness I – Group

Definition: degree in which participant is involved with, and invested in the other members of the group. Demonstrates awareness and interaction with other members.

Engagement, Interactivity and Connectedness II – Art Task

Definition: degree in which participant is involved with, and invested in the engaging with the art directive and creating an image based on what the prompt is. Demonstrates effort and investment of time to create image.

Follow rules I - Zoom related etiquette

Definition: The degree to which participant use prescribed rules taking turns, appropriate attire for on screen, multi-tasking or doing secondary activity while using Zoom.

Follow rules II - Art Directive related

Definition: Participant shows ability to stay on topic with the art directive or be able to articulate a reason that they did not that addresses avoiding the topic

Follow rules III - Group Dynamics and Interactions with Other Group Members

Definition: Participant responds with awareness, acceptance, understanding, and appreciation of others through words or actions to other group members when expressing themselves or giving feedback to other group members taking into consideration others' feelings and experiences.

Other Reactions/Observations made during session to intervention

Appendix D

Workshop Evaluation Study

On a scale One to Five Rate your experience attending this therapeutic art group that was accessed using Zoom. Circle number that matches your response.

One = Very Dissatisfied

Two = Dissatisfied

Three = Neither Dissatisfied nor Satisfied

Four = Satisfied

Five = Very Satisfied

How satisfied were you using Zoom to participate in the therapeutic art group?

1 ----- 2 ----- 3 ----- 4 ----- 5

How satisfied were you with the content of the therapeutic art group accessed by Zoom?

1 ----- 2 ----- 3 ----- 4 ----- 5

How satisfied were you with the art directives in the therapeutic art group accessed by Zoom

1 ----- 2 ----- 3 ----- 4 ----- 5

How satisfied were you with the group sharing interaction/ experience in the therapeutic art group accessed by Zoom?

1 ----- 2 ----- 3 ----- 4 ----- 5

How likely are you to attend another therapeutic art group accessed by Zoom?

1 ----- 2 ----- 3 ----- 4 ----- 5

How likely are you to recommend participating in a therapeutic art group accessed by Zoom?

1 ----- 2 ----- 3 ----- 4 ----- 5

How easy was it for you to do art therapy over Zoom?

Any suggestions for next time?

Any feedback about me as the facilitator? Things you liked or didn't like?

Any more feedback?

Appendix E
Debriefing Statement

Thank you for your participation in this research on utilizing Zoom to participate in an Acceptance and Commitment Therapy (ACT) art therapy group. The purpose of employing scale questionnaires, artwork, and reflection questions was to gather information in as many ways as possible to understand how people can be engaged in art over Zoom as well as how we can help promote social connectedness while experiencing the Zoom art program. All the things we did helped me understand if Art Therapy over Zoom helps people make art and feel good.

I hoped you would enjoy the process and experience being in the present moment. The overall goals of the study were to promote co-presence, psychological involvement, and behavioral engagement for individuals with acquired brain injury. If you feel that you need assistance with any mental health issues as a result of this study, a list of therapy resources is included below.

The Marin Suicide Prevention & Grief Counseling

- 24/7 Suicide Hotline: (415) 499-1100
- 24/7 Grief Counseling: (415) 499-1195.

For non-emergency referrals Schurig Center Community Liaison:

McKenna Becker

mckenna@schurigcenter.org

(415) xxx-xxxx

Here is some more information about the research I used to inform my study. Current research has found that gaps in ongoing post-acute treatments can have negative effects on psychological and emotional needs of individuals with ABI. Undetected or untreated psychosocial issues can contribute to an overall decrease in mental and physical well-being Your participation was important in helping researchers understand if the treatment option, delivering art therapy via Zoom to individuals in the ABI chronic phase has potential to reduce obstacles to access interventions.

Participants who participate in this research will contribute to the care treatment options and the wellbeing of others who have acquired brain injuries. Individuals in the study will have access to art experiential experiences that are not yet widely available. The involvement in this study might help participants take an active role in their sense of wellbeing and help combat feelings that might be causing the dissatisfaction. Because the study will be conducted in groups, participants will have the opportunity to build a peer support group and improve social participation.

Final results will be available from the investigator, Shari Weiser, by June 1, 2021. You may contact me at ****@gmail.com to receive an email copy of the final report. All results will be grouped together; therefore individual results are not available. Your participation, including your name and answers, will remain absolutely confidential, even if the report is published.

If you have any additional questions regarding this research, please contact Shari Weiser at ****@gmail.com

Thank you again for your participation.

Appendix F

Networked Minds Social Presence Inventory Approval Email

Biocca, Frank <*****@njit.edu>

Tue, Nov 10, 12:50 PM

Shari

Thank you for your inquiry.

You have permission to use the inventory.

Best regards

Frank

Appendix G

Agreement to Participate in Research

RESPONSIBLE INVESTIGATOR: Shari Weiser

TITLE OF RESEARCH PROJECT: ZAP: Zoom Art Program With Adults Living With Acquired Brain Injury, The Effect of Using Videoconferencing to Deliver ACT Art Therapy Intervention.

I have been asked to participate in a research study supporting individuals with persistent impairments due to an acquired brain injury. The study investigates if Acceptance and Commitment Therapy (ACT) art therapy sessions delivered via a video conferencing platform such as Zoom would be beneficial for treatment with individuals with ABI. "ACT is an evidence based cognitive therapy designed to reduce depression and anxiety and increase present moment awareness and psychological flexibility."

Specifically, the research is most interested in how participants are engaged in the online ACT art therapy group. This study's results should further our understanding of using ACT art therapy sessions via a teleconferencing platform, Zoom. It offers a possible alternative way to deliver a specialized treatment option explicitly tailored for people's needs with ABI. It has the potential to offer individuals with persistent impairments due to ABI ongoing and continued support to maintain a values-based connection and communication during a challenging time due to Covid-19.

I understand that:

1. I will be asked to participate in four separate 90-minute sessions that occur once a week.

Additionally, there will be phone or email communication to cover research project orientation, consent expectations, and debriefing which will take approximately 20 minutes.

Each session includes an art directive as well as specified assessments to measure the participant's level of engagement, social presence, and satisfaction.

2. Both verbal and written explanations pertaining to the research will be provided. Extra time will be provided to answer questions. Caregivers can provide assistance, as needed.
3. The possible psychological risks of participating in this study are considered minimal and may include some discomfort based on the reaction to the art directives. Should any feelings be elicited based on my participation in this study, I will be referred to the Schurig centers resource specialist who will provide a list of psychological services and providers.
4. There may be minor benefits to me personally, it might help participants take an active role in their sense of wellbeing and help combat feelings that might be causing the dissatisfaction. Additionally, there is an opportunity to build a peer support group and improve social participation.
5. The results of this study may be published, but any information from this study that can be identified with me will remain confidential and the data will be pooled to maintain anonymity.
6. Any questions about my participation in this study will be answered by Shari Weiser through email or by telephone (****@gmail.com or 415-xxx-xxxx). Any questions or concerns about this study should be addressed Sarah Kremmer at SKremer@ndnu.edu .
Complaints or concerns about this study may be addressed to Amy Backos at
Abackos@ndnu.edu
7. My consent is given voluntarily without being coerced. I may refuse to participate in this study or in any part of this study, and I may withdraw at any time, without prejudice or with any future contact with NDNU.
8. I have received a copy of this consent form for my record.

I HAVE MADE A DECISION WHETHER OR NOT TO PARTICIPATE.

Please check one:

_____ YES, I agree to participate in this research study and I agree to have my art as part of the study data.

_____ NO, I do NOT agree to participate in this research study and I agree to have my art as part of the study data.

Print Participant's Name Participant's Signature

Date Investigator's Signature

Appendix H
Demographics

Name

Age

Ethnicity

Length of time since brain injury

Have you participated in art therapy before?

What is your experience using Zoom?

Appendix I

Consent to Use and/or Display Art

CONSENT BETWEEN: Shari Weiser and _____,

_____ ; agree to allow Shari Weise to use and/or display

photographs of my artwork, for the following purposes(s):

- Reproduction and/or inclusion within the research currently being completed by the expressive arts therapy masters student and for both video and written thesis formats.
- Reproduction and/or presentation at professional conferences.
- Reproduction, presentation, and/or inclusion within future publications in professional articles or books.

It is my understanding that neither my name, nor identifying information will be revealed in any presentation or display of my artwork.

This consent to use or display my artwork may be revoked by me at any time. I also understand I'll receive a copy of this consent form for my personal records.

Participant signature _____ Date _____

I, Shari Weiser agree to the following conditions in connection with the use of artwork: To the best of my ability, I agree to keep photographs of your artwork safe and treat it with the extreme respect while in my care and storage. I also agree to keep your work in confidentiality by not disclosing your identity by name and/or other identity ways in the manner agreed to in the above.

Signed _____ Date _____