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**COMPARISON OF THE EFFECTS OF DEFUSION AND CONTACT WITH THE PRESENT MOMENT ACTIVITIES ON INFLEXIBLE BEHAVIOR IN YOUTHS WITH AUTISM SPECTRUM DISORDER**

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COMPARISON OF THE EFFECTS OF DEFUSION AND CONTACT WITH THE  
PRESENT MOMENT ACTIVITIES ON INFLEXIBLE BEHAVIOR IN YOUTHS WITH  
AUTISM SPECTRUM DISORDER

by

Melina Segneri

B.S., Northern Illinois University, 2018

A Thesis  
Submitted in Partial Fulfillment of the Requirements for the  
Master of Science Degree

School of Psychological and Behavioral Sciences  
in the Graduate School  
Southern Illinois University Carbondale  
May 2021

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THESIS APPROVAL

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A Thesis Submitted in Partial  
Fulfillment of the Requirements  
for the Degree of  
Master of Science  
in the field of Behavior Analysis and Therapy

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Graduate School  
Southern Illinois University Carbondale  
March 30, 2021

## AN ABSTRACT OF THE THESIS OF

Melina Segneri, for the Master of Science degree in Behavior Analysis and Therapy, presented on March 30, 2021, at Southern Illinois University Carbondale.

**TITLE: COMPARISON OF THE EFFECTS OF DEFUSION AND CONTACT WITH THE PRESENT MOMENT ACTIVITIES ON INFLEXIBLE BEHAVIOR IN YOUTHS WITH AUTISM SPECTRUM DISORDER.**

**MAJOR PROFESSOR: Dr. D. Shane Koch Ph.D.**

This study aimed to evaluate the effects of defusion and contact with the present moment activities on psychological flexibility and maladaptive behaviors in youths with Autism. The researcher gave the participants two options for their intervention delivery medium: over telehealth or in-person. This study used a multi-element research design, with randomized controlled trials. Each component was isolated and tested on its utility and effectiveness towards decreasing maladaptive behavior and increasing psychological flexibility. The questionnaires implemented were Child Acceptance and Mindfulness Measurements (CAMM) and Acceptance and Fusion Questionnaire for Youth (AFQ-Y8). The participants completed these evaluation tools at the beginning and the end of the intervention. This study utilized the concepts of defusion and contact with the present moment through metaphors, experiential activities, and discussions. This study extended research that evidenced further validity of Acceptance and Commitment Therapy in youths with Autism and translated through a technology medium to allow maximum accessibility and inclusivity of all participants. The current research drawn from this study displays promising results, specifically in decreasing inflexible behavior and symptoms of Autism Spectrum Disorder (ASD).

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## CHAPTER 1

### INTRODUCTION

#### **Autism Spectrum Disorder**

According to the American Psychiatric Association, Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder. Critical characteristics of ASD include persistent behavioral invariance deficits, social communication and interaction deficiencies, inflexible adherence to routines, and highly restricted interests. These characteristics can cause significant impairments in social, home, and community functioning (American Psychiatric Association, 2013). To meet diagnostic criteria for ASD according to the DSM-5, a child must have persistent deficits in each of three areas of social communication and interaction, and must also exhibit at least two of the four types of restricted, repetitive behaviors (American Psychiatric Association, 2013). As of 2016, Autism Spectrum Disorder has a rate of one in 54 children around the age of 8 years old and is 4.3 times as likely to affect boys than girls (Maenner, Shaw, Baio, et al., 2016). Because of the prevalence of Autism Spectrum Disorder, various interventions are available to help combat the symptoms and impairments it may cause within individuals. Applied Behavior Analysis, social skills training, Occupational Therapy, Physical Therapy, sensory integration therapy, and assistive technology can address these symptoms. The ideal treatment varies depending on an individual's age, strengths, and barriers (Center for Disease Control, 2019).

A formal recommendation includes Applied Behavior Analysis or behavioral intervention, along with multiple practice areas that address these symptoms. Behavioral approaches concentrate on several areas: adaptive health skills, communication skills, social interactions, cognition development, and repetitive or restrictive behaviors. According to Cooper (2019), Applied Behavior Analysis is a behavioral science devoted to the experimental study of

socially significant behavior as a function of an environmental variable. “Routines and rituals, as well as an unbending insistence upon others doing things in an idiosyncratic way, has unwanted effects that can be associated with significantly diminished life outcomes” (Szabo, 2019). These barriers appear as maladaptive behaviors, or also known as problem behavior, and psychological inflexibility. These barriers impede learning and skill acquisition, which can further delay the neurological disorder, increase the symptoms, and promote the likelihood of complete dependence on caregivers if not treated accordingly.

### **Applied Behavior Analysis (ABA)**

ABA has seven dimensions: Generality, Effective, Technological, Applied, Conceptually Systematic, Analytic, and Behavioral. Baer, Wolf, and Risley (1968) explained what each dimension entails, which can be used to understand ABA’s applicability. The Generality dimension refers to the durability and expanding behavior change beyond the training environment. The Effective dimension presents that significant change can be observed through measurable behavior change. The Technological dimension displays the ability for research and protocols to be replicated due to sufficient details. The Applied dimension refers to social significance by creating behavior change goals that target areas in a person’s life that would impact overall quality. The Conceptually Systematic dimension is when an intervention is based on applied behavior analysis principles: reinforcement, punishment, and extinction. The Analytic dimension refers to the use of analysis to identify functional relations between environmental variables and responses. The Behavioral dimension refers to the behavior of interest that can be observed and measured (Baer, Wolf, & Risley, 1968).

Applied Behavior Analysis is a field focused on modifying and developing significant behaviors using the principles of learning (Franks & Wilson, 1974). ABA is recognized for its

well-established interventions. For example, a meta-analysis of ABA-based interventions for individuals with autism showed that long-term ABA intervention is associated with medium and significant effects on intellectual functioning, language development, social skills, and independent living skills (Virues-Ortega, 2010). Recently, studies have shown that ABA efficacy can be strengthened with the use of Acceptance and Commitment Training.

### **Acceptance and Commitment Therapy**

Within Applied Behavior Analysis, there is a sector of a new age study known as Radical Behaviorism. This study explores the mind's inner workings, such as internal dialog and emotions, and how it affects verbal behavior. In Radical Behaviorism, a theory was dedicated to explaining language and cognition, known as the Relational Frame Theory (RFT). According to RFT, the core of human language and awareness is the contextually controlled ability to relate events mutually and arbitrarily. RFT also changes the functions of specific events based on their relations to others. RFT was developed into a comprehensive experimental research program. Based on RFT, Steven Hayes developed the Acceptance and Commitment Therapy (Moura & Leite, 2019).

Acceptance and Commitment Therapy is an evidence-based procedure for individuals with a sufficient verbal repertoire for internal behavior expression. ACT relies heavily on counterconditioning techniques, such as mindfulness and positive reinforcement. The 'A' within ACT stands for 'accept your thoughts and feelings and be present'; the 'C' stands for 'choose a valued direction'; the 'T' stands for 'take action.' Steven Hayes contends that the main goal within ACT would be to deal with deeper clinical issues to create a coherent road map for the individuals participating. It also deals with what is relevant to each person when facing their problems, which is a critical component assuring that we do work that does not feel false

(Rousmaniere, 2013). ACT implements direct contingencies and indirect verbal actions to increase psychological flexibility through acceptance, defusion, self as context, contact with the present moment, values, and committed action (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004, p. 29). “ACT integrates scientific knowledge about contingency shaped behavior and verbal relations into a more effective therapeutic whole. Through the use of contextual control, commitment, and logical language, in turn, psychological events can be brought under control” (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004, p. 4-5). These statements and their corresponding studies clearly indicate that control of internal events can be made possible through verbal metaphors that create a visual and concrete relation inside the listener’s mind. “Pairing an action-based concrete visual with a metaphorical expression also served to reinforce the understanding of a figurative concept that can prove to be difficult to understand for many individuals with ASD.” (Singh, Lancioni, Karazsia, Myers, Kim, Chan, Jackman, McPherson, & Janson, 2019). The key to addressing clinical issues is facing them independently, which correlates with the degree of psychological flexibility an individual acquires. The end goal for ACT and how its proficiencies measure it is through the level of psychological flexibility.

Psychological flexibility is defined as “the ability to contact the present moment more fully as a conscious human being, and to either change or persist when doing so serves valued ends rather than facing rigidity behavior when faced with aversive psychological events” (Wilson & Murrell, 2004). Hahs, Dixon, and Paliliunas (2019) explained the processes of ACT and psychological flexibility through the implementations of metaphors and explanations on how language affects human hardships. When targeting psychological inflexibilities, using experiential exercises and skills that can be generalized to everyday life situations can aid future aversive events (Hahs, Dixon, & Paliliunas, 2019). ACT does not change the appearance of these

aversive events or make them disappear forever. While these events would always be present due to the environment and past contingencies of experience, ACT can change the function and how an individual reacts to the event.

### **The 6 Core Processes of ACT**

All six of the core processes within ACT--acceptance, defusion, self as context, contact with the present moment, values, and committed action--have a crucial role in increasing psychological flexibility. Each of the six concepts falls under two separate processes that help distinguish the action/treatment that follows and falls under the category of commitment and behavior change processes or mindfulness and acceptance processes (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004). However, it must also be noted that fundamentally, all of the concepts complement each other and build off each other to increase psychological flexibility. “ACT balances strategies, in which readily changeable areas are the focus for change (e.g., overt behavior), and acceptance and mindfulness process have the focus of areas where change is not possible or helpful” (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004, p. 11). (See Figure 6 for the figure of psychological flexibility hexaflex)

### **Psychological Flexibility**

Practicing Acceptance and Commitment Therapy and the components that comprise its process can increase psychological flexibility, or “the process of contacting the present moment fully as a conscious human being and persisting or changing behavior in the service of chosen values” (Hayes et al. 2006). The ability to connect to the present moment, experience life entirely with minimal barriers, decrease stress, along with many additional psychological benefits, can be attained through this progression.

## *Acceptance*

This concept falls within the mindfulness and acceptance process. Acceptance works to remove judgment and acknowledge and accept all thoughts and situations that occur in the environment. Acceptance is the positive alternative to experiential avoidance in which the individual attempts to suppress events and embraces the lack of control or change happening internally or externally (Hayes, Luoma, Bond, Masuda, Lillis, 2006). Essentially, the concept of acceptance is about the understanding and awareness of internal events.

## *Cognitive Defusion*

This concept is within the mindfulness and acceptance process. Defusion provides techniques to break down a psychological event's function rather than control and change them. This concept does not make the events cease to exist, but rather decreases the importance, strength, and impact on the person experiencing. In other terms, the result of defusion is a decrease of attachment or quality to a private event instead of an attempt to change their frequency immediately. Byrne and Mahony's (2020) objective was to provide a systematic review to increase psychological skills that promoted psychological flexibility within individuals with Autism. Defusion can be implemented as a proposed core mechanism of change, displaying effectiveness in increasing psychological flexibility. Eilers and Hayes (2015) used a multiple baseline design to evaluate the effects of a defusion exercise ("Say this in a silly voice with me") and tracked the occurrence of problem behavior when repetitive behavior was placed on extinction. After the treatment resulted in a substantial deceleration of the problem behaviors, three follow-up sessions were conducted at three months. The same defusion procedure was enacted, and the same low rates of problem behavior were observed.

### ***Self as Context***

This concept is within both the mindfulness and acceptance process and the commitment and behavior change process. It teaches the differentiation between ‘I’ and ‘You,’ ‘Now’ and ‘Then,’ and ‘Here’ and ‘There.’ Self as context has the ordinary meaning of simply observing oneself. This concept incorporates language about the sense of self as a perspective and provides a spiritual side to verbal behavior (Hayes et al., 2006). Self as context is vital due to the ability to be aware of one’s emergence of experiences without attachment and developing flexibility towards these events. ACT therapists look for any negative attachments (i.e. “I am a bad person” or “I am a nervous person”) to the self through language and see if it can be loosened. An exercise to attain these tools may include an observer exercise, which consists of noticing who is noticing and acknowledging what does not change in the environment.

### ***Values***

This concept is within the commitment and behavior change process. Values are chosen qualities of purposive action that can never be obtained as an object but can be instantiated moment by moment (Hayes et al., 2006). Values are used as a guide or path that may lead a person to something they find essential or purposeful. All people differ in values, whether it is family, career, spirituality, etc. Consequently, this concept’s specificity to each person practicing can provide motivation or perseverance to attain their goals.

### ***Contact with The Present Moment***

This concept is within both the mindfulness and acceptance process and the commitment and behavior change process. Being present involves having the ability to have ongoing non-judgmental contact with internal and external events. This concept allows conscious awareness of experiences in the present moment enables an individual to perceive what is occurring in

space accurately. Also, contact with the present moment gives an individual vital information about whether to change or persist in behavior. There are two aspects of this concept, the first being “training to observe what is present in the environment and private experience, then taught to identify what is present, without excessive judgment or evaluation. Together this helps establish a sense of self as a process of ongoing awareness for events and experiences" (Hayes et al., 2006, p. 9). Contact with the present moment decreases as people begin to become caught up with the past or future. Kennedy, Whiting, and Dixon (2014) evaluated an ACT-based intervention that included defusion and present moment exercises designed to treat restricted food selection behaviors. They implemented a multiple baseline design across six young children. However, while the participants responded positively to the intervention, the research did not evaluate the use of a reinforcement contingency independent of ACT. Therefore, the relative contributions of reinforcement and ACT could not be analyzed and made it unclear if the participants would have responded solely to support.

### ***Committed Action***

This concept is within the commitment and behavior change process. Committed action allows an individual to create concrete goals based on their values and can make them attainable. Efforts in behavior change, in turn, lead to contact with psychological barriers that are addressed through other ACT processes. This concept involves the concrete actions in the direction of which values are aligned within the individual, even in the presence of obstacles. Committed action is not a promise or prediction, and it is not in any attempt to be absolved from all barriers an individual may face. Committed action means to have a valued direction towards change (Harris, 2007).

The six concepts with Acceptance and Commitment Therapy revolve that have been



addressed coincides with internal events and behaviors. The target concepts addressed within this study were tested for validity and how they affected psychological flexibility or internal behavior and illustrated how it influences problem behavior or external behaviors. Also, when you increase psychological flexibility, you are simultaneously reducing the harmful components within psychological inflexibility.

### **Psychological Inflexibility**

Due to ACT being a functional contextual intervention, inevitable human sufferings originate in psychological inflexibility fostered by cognitive fusion and experiential avoidance. Participants that show the effects of psychological inflexibility internally, therefore, also often exhibit inflexible behaviors. Psychological inflexibility can be broken down into six components that may influence negative actions or skill-inhibiting behaviors. “The functional contexts that tend to have such deleterious effects are largely sustained by the social, and verbal community” (Hayes et al., 2006). Inflexible behavior has the appearance of verbal protest or refusal to complete a task. Noncompliance is also a form of inflexible behavior--through failing to act under a rule, delaying responses, or altering the demand. The components that make up the concept of psychological inflexibility consist of cognitive fusion, attachment to the conceptualized self, inaction, impulsivity, persistence avoidance, lack of values, and weak self-knowledge. (See Figure 6 for a visual of the psychological inflexibility hexaflex.)

### ***Experiential Avoidance***

The first component within inflexible behaviors is experiential avoidance and displays contradictory actions to the acceptance components within ACT. Experiential avoidance may occur internally or externally. During experiential avoidance, the individual would attempt to suppress aversive events through off-topic comments’ observable behavior to avoid difficult

conversations. “Suppression is the active attempt to control and eliminate the immediate experience of a negative private event such as an unwanted thought, feeling, memory or physical sensation” (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2006, p. 27). Instead of facing events head-on, the individual would hide from them and, in turn, make the aversive event even more challenging to accept. Experiential avoidance is based on a pattern that, if unchallenged, is then amplified by the focus of wanting to avoid pain and feel good. These attempts to prevent aversive private events tend to increase their functional importance. Avoidance becomes more prominent because it becomes more salient. These control efforts are verbally linked to conceptualized adverse outcomes. They tend to narrow the range of possible behaviors due to an exceeding number of behaviors that can evoke uncomfortable private events.

### ***Cognitive Fusion***

Cognitive fusion displays contradictory functions to defusion and attempts to alter the form, frequency, or situational sensitivity of private events even when doing so causes behavioral harm (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Cognitive fusion refers to improper regulation of behavior by verbal processes, such as rules and derived relational networks (Hayes, Strosahl, & Wilson, 1999). It entangles thoughts to dominate awareness and influence behavior (Moura & Leite, 2019).

### ***Attachment to the Conceptualized Self***

The concept of attachment to the conceptualized self is a psychological inflexibility that combats the effects of the self as a context concept. The conceptualized past and future, and the conceptualized self, gain more regulatory power over behavior, contributing to inflexibility. Through this concept, the person experiencing negative constructions may feel that it may be essential to be right about who is responsible for their pain than to live more effectively with the

pain history. This inflexibility has the individual defending a verbal view of oneself than engaging in more workable forms of behavior that do not fit that verbalization (Hayes et al., 2006). For example, a person who displays nervous tendencies may never earn what they are worth in their career and become miserable at their job. This sequence can link the self to the consistent shy demeanor and become restricted from ever asking for a raise and become satisfied with their job.

### ***Inaction, Impulsivity, or Avoidant Persistence***

This psychological inflexibility component, described as inaction, impulsivity, or avoidant persistence, is known to be unworkable action or rigidity. In other words, this represents an incapacity to act effectively in a direction based on set values causes the loss of contact with the present moment (Moura & Leite, 2019). Inaction, impulsivity, and avoidant persistence can be grouped and interpreted as the inability to behave effectively with regard to behavior guided by values. This component pulls individuals away from attaining a present-focused, mindful, and valued life. Some examples include choosing to withdraw socially, be inactive, avoiding previously enjoyable activities. These specific behaviors serve as a self-defeating pattern and, in turn, increases struggles over time (Harris, 2009).

### ***Lack of Values Clarity***

This inflexible behavior concept describes a lack of direction, the dominance of pliance, and avoidant tracking of a set of values. Pliance is a rule-governed behavior under the control of speaker-mediated consequences for a correspondence between the rule and the relevant behavior (Hayes, Barnes-Holmes, & Roche, 2001; Hayes, Zettle & Rosenfard, 1989; Zettle & Hayes, 1982). When values are not identified and behaviors are not molded to be in line with those values, opportunities to use values to guide actions can be missed.

### *Dominance of the Conceptualized Past and Feared Future*

This concept is referred to as weak self-knowledge. Weak self-knowledge displays contradictory effects to contact with the present moment, enabling individuals to understand how their physical bodies contact the tangible forces around them. Suppose an individual was stuck in their own subjective, personal version of reality, which could cause the inability to contact the present moment. The feeling of detachment to self and surroundings may, in turn, cause excessive worry and rumination (Moura & Leite, 2019).

Psychological inflexible behaviors can be observed from an external standpoint, which can then present as inflexible behavior in appearance. According to Hayes, Luoma, Bond, Masuda, and Lillis (2006):

In the world of overt behavior, this means that long-term desired qualities of life (i.e., values) take a backseat to more immediate goals of being right, looking good, feeling good, defending a conceptualized self, and so on. People lose contact with what they want in life, beyond relief from psychological pain. Patterns of action emerge and gradually dominate in the person's repertoire, detached from long-term desired qualities of living. Behavioral repertoires narrow and become less sensitive to the current context as it affords valued actions. Persistence and change in the service of effectiveness are less likely. (p.7)

These inflexible or target behaviors were noted and defined as any instance of the participant saying inappropriate or harmful comments about nonpreferred activities, noncompliance to participate in a nonpreferred activity that may require extensive prompting elopement from nonpreferred activities or engaging in a tantrum or crying behavior.

The ACT processes are both overlapping and interrelated, each supporting the other in

targeting psychological flexibility. This study does not include all six concepts that makeup Acceptance and Commitment Therapy but instead utilizes the concepts of defusion and contact with the present moment. This change and extension showed the utility and power that these two concepts have on increasing psychological flexibility and impacting inflexible behavior within children with ASD. Therefore, according to Hayes, Strosahl, and Wilson (2012), cognitive fusion becomes maladaptive when one lacks alternatives to fusion that can be technically applied. Bardeen and Fergus (2016) compare cognitive fusion and experiential avoidance and conclude that these are two processes related to psychological inflexibility. “The interaction between cognitive fusion and experiential avoidance concerning psychological distress has yet to be empirically examined in the extant literature” (Bardeen & Fergus, 2016). This study from Bardeen and Fergus is the first to provide evidence that cognitive fusion and experiential avoidance work with emotional distress.

According to Steven Hayes (2006), existing evidence supported acceptance and defusion procedures and their impact on the ACT model. “Values-based procedures are just beginning to be tested. Other aspects of the ACT model have not been specifically tested in ACT component studies” (Hayes et al., 2006). Grau, McDonald, Clark, and Wetterneck (2020) utilizes the concept of multiple ACT core processes, one that is internal experiences, defusion, and one that is external experiences, contact with the present moment. Within this study, the components of defusion and contact with the present moment were the main focus and isolated to compare effectivity, aiming to address a gap in the literature comparing the isolated ACT concepts and their effect on inflexible behavior psychological flexibility. There is currently no research on the efficacy of ACT training procedures at producing lasting changes in young children with autism with rigid and challenging behavior during play activities" (Szabo, 2019). Pahnke, Lundgren,

Hursti, and Hirvikoski (2014) randomized students with high functioning autism to either a 6-week ACT-based skills training program that consisted of two weekly 40-min group sessions or daily mindfulness practices. Findings suggest that ACT may be an effective treatment for individuals with high functioning autism presenting with mood and anxiety difficulties.

The two processes within ACT influenced the rationale for isolating defusion and contact with the present moment. The mindfulness and acceptance process consists of acceptance, defusion, and contact with the present moment. The commitment and behavior change process consists of contact with the present moment, values, self as context, and committed action (Fletcher & Hayes, press). Defusion has a role in taking part in one process, which is the mindfulness and acceptance process. Contact with the present moment takes part in both processes: the mindfulness and acceptance process and the commitment and behavior change process. This research asked if the concept only consisted of targeting one process versus positively impacting both processes. There are three inflexible components that these two ACT concepts combat directly. Cognitive fusion was targeted through a defusion metaphor and an exercise. The dominance of the conceptualized past and feared future and inaction, impulsivity, or avoidant persistence was targeted by contact with the present moment metaphors and activities. “Despite the common misperception that ACT is too complex for children, it has been argued that the experiential and metaphorical delivery of ACT processes may be more suitable for children than traditional therapeutic methods such as cognitive disputation” (Coyne, McHugh, & Martinez, 2011). The purpose of this study is to compare the effects of specific components of Acceptance and Commitment Therapy on inflexible behavior and psychological flexibility with youths with problem behaviors.

## CHAPTER 2

### METHODOLOGY

The purpose of this study was to evaluate the effects of specific components within Acceptance and Commitment Therapy. It utilized the concepts of defusion and contact with the present moment through metaphors, experience activities, and discussions within each concept. There is a detailed outline of the methodology within the appendices. This modification and extension of research showed the utility and power of isolated ACT concepts through two different therapy delivery mediums.

#### **Participants**

Four male participants were selected to take part in this study. A table of demographics can be located in Table 2 for additional information. They all received behavioral services at the clinic, and these sessions were considered a volunteer service for them without any compensation. The participants were informed that the research would require one hour per week for a total of six weeks. This study's inclusion criteria involved the age range of 7 to 11 years old, diagnosed with Autism Spectrum Disorder, a high-level of verbal behavior, having the ability to discuss thoughts and feelings, minimal prior exposure to Acceptance and Commitment Training, and has a history of observable maladaptive behaviors. Each participant's BCBA's objectively determined the evidence each participant showed they acquired a sufficient verbal behavior repertoire through the consultation. All BCBA's gave a formal recommendation for participation that each participant would engage in ACT activities based on their milestones and current assessment scores. The experimenter did not have access to their assessment score. The lead BCBA at Chicago Pediatric Therapy and Wellness Center solicited the participants' participation through email or face-to-face contact with their guardians. The principal researcher

recruited participants at their workplace at Chicago Pediatric Therapy and Wellness Center. The leading researcher knows two potential participants because she was conducting social group sessions between February to March. The other potential participants may have only seen the researcher in person in the clinic. Since the principal researcher works in the clinic, there is already a certain level of familiarity between potential participants/caregivers and the researcher. This familiarity allowed the participants to be more prone to access and share their thoughts and feelings.

Recruitment occurred via email and an overview of the study and was explained to entice parents into wanting their child to participate. Upon verbal agreement, the researcher communicated with the participants' parents and ran through what would occur for the next six weeks. The participants' parents gave consent because all of the participants are under 18; also, participants were asked to fill out an assent form. (Consent and assent forms can be located in Appendix G). The researcher signed the consent and assent forms with guardians and participants. Due to extenuating circumstances, the researcher conducted the intervention via Zoom or in-person therapy. Each participant was referred to within the study as "participant 1", "participant 2", "participant 3", and "participant 4".

### **Settings**

The researcher gave the participants the option to choose their intervention delivery medium, either over telehealth, through the communication medium called, Zoom, or in-person direct therapy. The researcher made this decision due to social distancing precautions and participant comfortability. Sessions were not part of the standard service delivery at the clinic where each participant received services. The research analyzed the effectiveness of telehealth services, and this research augments further validity to ACT practices and if behavior therapy



can be effective through a technology medium. Participants 1, 2, and 3 received services via telehealth, and participant 4 received services via in-person sessions. The setting for participants 1, participant 2, and participant 3 received the intervention via telehealth through the Zoom format. Therefore, all three participants participated at their own homes, and the experimenter was also located at their homes. Two out of three participants had their sessions in the morning or before noon (participant 1 and participant 2). The other two participants had their session near the end of the day, after four o'clock (participant 3 and participant 4). Participant 4 received the intervention in person in a therapy room, consisting of a small room with a table and two chairs. It was only the participant and the experimenter. The experimenter wore proper personal protective equipment such as a mask and physical distance to follow health and safety guidelines.

## **Materials**

Child Acceptance and Mindfulness Measurements (CAMM) and Acceptance and Fusion Questionnaire for Youth (AFQ-Y8) were the questionnaires implemented within this study to compare a baseline and growth through a systematic questionnaire classification. The questionnaires were filled out by the researcher and participants at the beginning and the end of the intervention. A visual scale was presented to the participants to aid in accurately responding to all questions within the questionnaire (Appendix C). Child and Adolescent Mindfulness Measure, the CAMM is a self-report measure of mindfulness for use with children and adolescents that measures emotional intelligence, mental health and wellbeing, and social and emotional competence (Greco, Baer, Smith, 2011). The CAMM scale was developed by Laurie Greco, Ruth Baer, and Gregory Smith. It consists of 25 items that the participants asked themselves to relate in the Likert format. While the CAMM scale has a one-dimensional factor

structure, it is based on the multidimensional factor structure of the Kentucky Inventory of Mindfulness Skills (KIMS) (Baer et al. 2004) with items thought to tap into the following two aspects of mindfulness: acting with awareness and accepting without judgment. Responses were scored on a 5-point Likert scale with response options ranging from never to all the time. The minimum score is 0, and the maximum score is 40, with lower scores indicating higher tendencies to suppress psychological events, display inflexibility, and engages in experiential avoidance in everyday life. The scale measures psychological flexibility within children and adolescents. The higher the score on the scale, the higher the psychological flexibility. The questionnaire measures any increases or decreases in participants' scores over time, contingent on Acceptance and Commitment therapy tools' active practice.

The Avoidance and Fusion Questionnaire for Youth is a child-report measure of psychological inflexibility engendered by high cognitive fusion levels and experiential avoidance (AFQ-Y8; Greco, Murrell, & Coyne, 2005). The authors of the AFQ-Y8 scale are Laurie Greco, Warren Lambert, and Ruth Baer created an 8-item measurement scale that asks respondents to rate how authentic each item is for them (0 = Never; 4 = All the time). To compute the total score by summing the items. The AFQ-Y8 has possible scores ranging from 0 to 32. All items are tied to ACT's human suffering model and were generated to represent a theoretically cohesive conceptualization of psychological inflexibility fostered by cognitive fusion. Examples of cognitive fusion items include: "My thoughts and feelings mess up my life;" "The bad things I think about myself must be true." Examples of experiential avoidance items include: "I push away thoughts and feelings that I don't like." Examples of inaction or behavioral ineffectiveness in the presence of unwanted internal experiences include: "I can't be a good friend when I feel upset." Consistent with the theory underlying acceptance and commitment therapy (ACT), items

converged into a 17-item scale (AFQ-Y) and an 8-item short form (AFQ-Y8). The lower the score in this questionnaire scale directly correlates with high psychological flexibility. The higher the score displays higher tendencies to suppress psychological events, show inflexibility, and engages in experiential avoidance. The questionnaire measures any increases or decreases in participants' scores over time, contingent on Acceptance and Commitment therapy tools' active practice. Results of classical test theory, factor analysis, and item response theory support the psychometric properties of the 8-item version of the AFQ-Y8. Overall, research suggests that the AFQ-Y8 may be a valuable and child-friendly measure of core ACT processes" (Greco, Lambert, & Baer, 2008). Hekmati, Ranjbar, & HajiSaghati found that the AFQ-Y8 measures psychological inflexibility in children and adolescents. AFQ-Y8 showed useful construct, concurrent, convergent, and discriminant validity. AFQ-Y-8 showed adequate internal consistency and stability. The CAMM scale and AFQ-Y8 scale, which gave an accurate measurement of psychological inflexibility, were taken before and after the participants' intervention.

## **Variables**

The independent variables compared the effects of two concepts within Acceptance and Commitment Therapy, which were defusion and contact with the present moment. The experimenter introduced the components by using a randomized generator to prevent conflict with external validity. Four sessions targeted each concept. The activities implemented with the defusion concept were The Mental Appreciation (Dixon, 2014), The Bear and the Blueberry Bush (Turrell & Bell, 2016), Paper Dragon (Dixon, 2014), Building Your Fear (Dixon, 2014). The activities implemented within the contact with the present moment concept were Investigating Our Mouth, Mindfulness in Thoughts (Dixon, 2014), Mindfulness in Music

(Dixon, 2014), and Magnifying Glass (Dixon, 2014). During each condition, the effects on maladaptive behavior were observed and visible differences resulting in inflexible behavior. This study's secondary independent variable showed the utility of services delivered via telehealth or direct in-person therapy. Three out of the four participants received services through the telehealth medium, and the fourth participant received services face to face.

The dependent variable was the frequency of inflexible behaviors emitted by the participants. The topography of the recorded behaviors was an isolated instance of off-topic statements, any attempt to leave, engagement in tangibles in the room, and not responding to the experimenter's questions. All participants indicated the same appearance of psychological inflexibility or maladaptive behavior. The researcher conducted an indirect functional analysis during the baseline phase, and it was determined that the inflexible behaviors were escape and attention maintained. The researcher conducted the indirect functional analysis to track antecedent, behavior, and consequence data (ABC), which was taken contingent on behavior occurring. ABC data can be considered within Appendix E. All participants displayed a similar appearance of maladaptive behavior and similar functions of behavior, which the researcher observed to be attention or escape. Escape-maintained behavior can appear as an attempt by the individual to avoid or escape from the presented task. Essentially, attempting to escape or avoid a psychological or external event is the visual representation of psychological inflexibility. During the baseline phase, the behaviors occurred during comprehension questions. Comprehension questions were designed to target specific details within the story and expressively elaborated on the presented content to their own life.

The expected behavior that the experimenter observed consisted of having full attention to activities which can be observed through the behavior of making eye contact with the screen

(over telehealth) or the presenter (when in person). The participants were expected to answer and try to complete all activities without additional prompting for engagement. Due to the subject's ability to practice the right to assent, the researcher respected it because of autonomy. However, the refusal to engage in a particular activity was counted as psychological inflexibility due to the incompleteness of the activity. Even with this in mind, none of the participants practiced their right to assent throughout this entire study. The experimenter took the frequency of inflexible behaviors contingent on the occurrence only during the sessions during which the researcher contacted the participants. A secondary dependent variable consisted of the participants filling out two separate questionnaires, the CAMM scale and the AFQ-Y8 scale. A visual scale was presented to the participants to aid in accurately responding to all questions within the questionnaire (see Appendix C). These two scales measure psychological flexibility and experiential avoidance. The participants took these questionnaires directly before the first baseline session than after the last intervention session, six weeks apart, and then tested for social significance.

### **Data Collection and Interobserver Agreement**

Pre-existing data was not obtained from any of the participants. The data was collected during the three to four weeks of baseline and four weeks of intervention. Frequency data of inflexible behavior was taken when the researcher contacted the participants during the one-hour weekly session.

The researcher took interobserver agreement (IOA) to increase validity when tracking the dependent variable's frequency. IOA refers to the degree to which multiple observers report the same observed values after measuring the same events. Based on existing research, IOA should be obtained for a minimum of twenty percent of sessions and recommended for twenty-five to

thirty-three percent of sessions to have agreement. Therefore, twenty-five percent of the sessions were recorded for IOA to be taken, meaning that each participant had one session recorded. Also, it is essential to decrease the number of contacts made between people due to social distancing. Therefore, the collection of IOA over the video ensured zero external influence outside of the researcher and the participant. The experimenter stored the videotapes in a password-protected file within the lead researcher's home computer. There was only one individual who had access to the files. They had access to the videotapes from the start of the intervention until the intervention, from September 2020 to December 2020. The experimenter deleted the video entirely in December 2020. There was no video trace, and no one had access to the video recordings after December 2020.

During twenty-five percent of the intervention sessions, a second observer collected procedural integrity data. Mean resultant procedural reliability based on IOA was one hundred percent during the intervention sessions. Procedural integrity was also evaluated during twenty percent of both questionnaires (CMM and AFQ-Y8) and resulted in a mean score of one hundred percent.

## **Procedure**

There were three to four baseline sessions the first two to three weeks and then followed by an intervention that was an additional four weeks of sessions. The sessions' meet times occurred two times per week for 30 minutes in duration, equaling an hour in total per week. The current study displayed a multi-element research design to compare the effects of defusion and present moment activities. Multiple cases are included in this experiment because having a randomized schedule of the interventions strengthened the internal validity. Randomizing the two interventions ensures no biases are being formed. "Given the mixture of studies using a

range of treatment designs, a quality appraisal tool that could be used for designs ranging from randomized controlled trials to single case studies was needed” (Szabo, 2016). Each study component was isolated and experimented on its utility through metaphors, experiential activities, discussions, and effectiveness towards decreasing maladaptive behavior and increasing psychological flexibility.

### ***Baseline***

The baseline phase was created to imitate the intervention without the empirical evidence that the intervention displays within its content. The experimenter took data for three consecutive sessions to establish a starting point where each participant stands regarding inflexible behavior and psychological flexibility. The psychological flexibility was scored using the CAMM scale, and psychological inflexibility was scored using the AFQ-Y8 scale. A visual scale was presented to the participants to aid in accurately responding to all questions within the questionnaire, which can be referenced in Appendix C. This baseline phase was structured similarly as to how the ACT-based interventions ran. The breakdown included a short story that contains a moral message. All morality stories are derived from a website that teachers use for teaching morality and comprehensions. The site was [superteacherworksheets.com](http://superteacherworksheets.com). These messages have the appearance of how the researcher presented the metaphors within the intervention. The short stories implemented were ‘The boy who cried wolf,’ ‘Locked out,’ ‘Treasure,’ and ‘Field day.’ Each story covers the concepts of good sportsmanship, honesty, and allowance. Next, there was a set of comprehension questions, which had the discussion portion’s appearance within the intervention and ensured that the participant listened and comprehended the story’s premise. Comprehension questions were designed to target specific details within the story and how the story applied to the participant’s life personally. For example, during the short story that taught

good sportsmanship, Field Day had pertinent questions that had the participants self-reflect if they are a good sport. Lastly, an activity was in the form of a game, including board games for the in-person sessions and then the online version for the telehealth sessions. The outline of the baseline phase can be located in Appendix D.

### ***Intervention***

All participants received the same treatment to ensure cohesiveness and consistency. The intervention was twice a week for four weeks with an estimated amount of thirty minutes per session. Each session touched on a specific concept targeted and compared how it affects psychological flexibility. This study utilizes the concepts of defusion and contact with the present moment through metaphors, experiential activities, and discussions within each concept. All metaphors and exercises came from existing literature. The literature that provided the exercises was ACT for children with autism and emotional challenges by Mark Dixon and ACT for adolescents: Treating teens and adolescents in individual and group therapy by Turrell and Bell.

The sessions that comprised the defusion concept include The Mental Appreciation (Dixon, 2014), which consisted of making a mental application through writing thank you letters to self. The Bear and the Blueberry Bush (Turrell & Bell, 2016) consisted of creating a family tree and thinking about their ancestors. They were then asked to consider if someone in their tree had been removed and how that would relate to them personally. Paper Dragon (Dixon, 2014) consisted of having the participants think of a dragon thought, which is a scary thought or worry, write them down on paper, then make the paper into something new that is less frightening. Building Your Fear (Dixon, 2014) consisted of having participants build up to something they fear out of clay and then disconnecting themselves from the tangible object by smashing it or



making it into something else. They were the creator but also the destroyer. You can observe your fear and creation, and you can choose to let it be or squish it.

The sessions that comprised the concept of contact with the present moment consisted of Investigating Our Mouth (Dixon, 2014), which had the participants eat snacks, analyzing all of the sensory aspects of eating, and talking about the sensations of savoring a snack. Mindfulness of Thoughts (Dixon, 2014) had the participants think of three thoughts on their mind and thoughts they try to ignore. They were then instructed to draw these thoughts that they often try to ignore and bring attention to the current environment that contains these thoughts.

Mindfulness of Music (Dixon, 2014) included listening to music and writing down what they heard, felt, tasted, and smelt while the music was playing. Magnifying Glass (Dixon, 2014) consisted of writing down a problem they were facing and looking at it without and with a magnifying glass. People often look at disturbing thoughts or worries under a magnifying glass and hyper analyze them. This activity helps the participant displace the thought from their mind and contact it within the present moment in a physical form.

## CHAPTER 3

### RESULTS

The results were displayed in Figures 1 through 4 in the Appendices for reference. For participant 1, the baseline level demonstrated an average of 5.72 emissions of inflexible behavior across four baseline sessions. The baseline also shows a decreasing trend line of the target behavior. The variability was low and offers stability, with the range of the highest data point being seven target behaviors and the lowest being five target behaviors. A range was 2 data points across four baseline sessions.

For participant 1 within the defusion phase, the level displayed an average of 3.5 emissions of inflexible behavior across four sessions. This phase revealed a decreasing trend of the target behavior. The variability was high, with the range of the highest data point being eight target behaviors and the lowest being one target behavior. The range was 7 data points across four sessions. According to Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, and Shadish (2010), “Immediacy of the effect refers to the change in level between the last three data points in one phase and the first three data points of the next. The more rapid the effect, the more convincing the inference that change in the outcome measure was manipulating the independent variable. Delayed effects might compromise the internal validity of the design.” (Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, and Shadish, 2010). The level of the last three data points within the baseline phase displayed an average of 5.6 emissions of inflexible behavior. The level of the first three defusion sessions had an average of 4 emissions of inflexible behavior. This decreasing effect shows immediate change and provided convincing evidence that the inference that change in the outcome measure was due to manipulating the independent variable. There was a 0% overlap between the data points with the defusion phase and the

baseline phase.

For participant 1, within the contact with the present moment phase, increased the level with an average of 6 emissions of inflexible behavior across four sessions. This phase displayed an increasing trend line of the target behavior and implied a flatter upward tilt to the curve and an increase in score over a more extended time. The variability was low, with the highest data point being eight target behaviors and the lowest five target behaviors. The range was three data points across four sessions. The level of the last three data points within the baseline phase displayed an average of 5.6 emissions of inflexible behavior. The first three contact with the present moment sessions showed a level with an average of 6 emissions of inflexible behavior. There was a 50% overlap between the data points with the contact with the present moment phase and the baseline phase. There was also a 25% overlap of data points between defusion and contact with the present moment.

For participant 2, the baseline phase level displayed an average of 5.8 emissions of inflexible behavior across five sessions. This phase displayed an increasing trend line of the target behavior. The variability was high, with a range of the highest data point being ten target behaviors and the lowest being one emission of the target behavior. The range was nine data points across five baseline sessions.

For participant 2 within the defusion phase, the level displayed an average of four emissions of inflexible behavior across four sessions. This phase showed a stable trend and a slightly increasing trend. Variability was low, with a range of the highest data point being five target behaviors and the lowest being three target behaviors. The range was two data points across four sessions. The level of the last three data points within the baseline phase display an average of 7.67 emissions of inflexible behavior. The level of the first three defusion sessions

displayed an average of four emissions of inflexible behavior. This decreasing effect showed immediate change and provided convincing evidence that the inference that change in the outcome measure was due to manipulating the independent variable. There was a 33.34% overlap between the data points with the defusion and the baseline phase.

For participant 2, within the contact with the present moment phase, showed an increase in level with an average of 5.5 emissions of inflexible behavior across four sessions. This phase showed a significant decrease in trend. There was high variability within this phase, which is similar to the baseline phase, with the range of the highest data point being eight and the lowest data point being one. The range was seven data points across four sessions. The level of the last three data points within the baseline phase displayed an average of 7.67 emissions of inflexible behavior. The level of the first three contact with the present moment sessions displayed an average of seven emissions of inflexible behavior. This slight decreasing effect showed immediate change and provided convincing evidence that the inference that change in the outcome measure was due to manipulating the independent variable. There was a 66.67% overlap between the data points with the contact with the present moment phase and the baseline phase. There was an overlap between the data points within contact with the present moment and defusion at 12.5%.

For participant 3, the baseline phase level displayed an average of four emissions of inflexible behavior across four sessions. This baseline phase displayed a slight increase in trend. The baseline also displayed low variability, with a range of the highest data point being six target behaviors and the lowest data point being three target behaviors. The range was three data points across four sessions.

For participant 3, the defusion phase level displayed an average of five emissions of

inflexible behavior across four sessions. This phase displayed an increasing trend since baseline. The defusion phase displayed high variability, with a range of the highest data point being nine target behaviors and the lowest data point being three target behaviors. The range was six data points across four sessions. The level of the last three data points within the baseline phase displayed an average of 4.3 emissions of inflexible behavior. The level of the first three defusion sessions displayed an average of 5.67 emissions of inflexible behavior. This slight increase in behavior showed delayed effects of the intervention that might compromise the internal validity within this phase. There was a 50% overlap between the data points within the defusion phase and the baseline phase.

For participant 3, the contact with the present moment phase level displayed an average of 3.25 emissions of inflexible behavior across four sessions. This phase displayed a slight decreasing trend. This phase displayed a low variability with a range of the highest data point being five target behaviors and the lowest data point being two target behaviors. The range was 3 data points across four sessions. The level of the last three data points within the baseline phase showed an average of 4.3 emissions of inflexible behavior. The level of the first three contact with present moment sessions displayed an average of 3.67 emissions of inflexible behavior. This slight decrease showed immediate effects and provided evidence that the inference that change in the outcome measure was due to manipulating the independent variable. There was a 12.5% overlap between the data points within the contact with the present moment phase and the baseline phase. There was a 12.5% overlap between the data points within the defusion phase and the contact with the present moment phase.

For participant 4, who received in-person telehealth services, the baseline phase displayed an average of 5.8 emissions of inflexible behavior across five sessions. This phase

displayed a decreasing trend. The variability level was high, with a range of the highest data points being eight target behaviors. The range was five data points across five baseline sessions.

For participant 4, the defusion phase displayed an average of 2.75 emissions of inflexible behavior across four sessions. This phase displayed a decreasing trend. Defusion displayed a low level of variability and stability with a range of the highest data point being four target behavior and the lowest being one target behavior. The range was three data points across four sessions. The level of the last three data points within the baseline phase displayed an average of 4.67 emissions of inflexible behavior. The level of the first three defusion sessions displayed an average of 2.67 emissions of inflexible behavior. This decrease showed immediate effects and provided evidence that the inference that change in the outcome measure was due to manipulating the independent variable. There was an 11.12% overlap between the data points within the defusion phase and the baseline phase.

For participant 4, the contact with the moment phase displayed an average of 2.75 emissions of inflexible behavior across four sessions. Contact with the present moment displayed a larger decrease in trend. This phase displayed a high level of variability with a range of the highest data point being five target behavior and the lowest data point had been zero target behaviors. The range was five data points across four sessions. The level of the last three data points within the baseline phase displayed an average of 4.67 emissions of inflexible behavior. The level of the first three contact with the present moment activities displayed an average of 3.67 emissions of inflexible behavior. This decrease showed immediate effects and provided evidence that the inference that change in the outcome measure was due to manipulating the independent variable. There was an 11.12% overlap between the data points within the defusion phase and the baseline phase. There was also a 12.5% overlap between the data points within the

defusion phase and the contact with the present moment phase.

The scaling questionnaires that were implemented within this study before and after the intervention had demonstrated positive results. The questionnaire measures any increases or decreases in participants' scores over time. The CAMM scale displayed an increased score over time across all participants, giving the relational effect for increasing psychological flexibility. The AFQ-Y8 scale displayed an increased score over time across all participants, giving the relational effect for decreasing psychological inflexibility and experiential avoidance.

Within the CAMM scale, participant 1 scored eighteen points during pre-intervention and then scored nineteen points post-intervention, which showed a one-point increase. Participant 2 scored eighteen points during pre-intervention and twenty-four points post-intervention, which showed a six-point increase. Participant 3 scored twenty-six points during pre-intervention and then scored thirty-seven points for post-intervention, which showed an eleven-point increase. Participant 4 scored twenty-two points during pre-intervention then showed no change during post-intervention. Within the AFQ-Y8 scale, participant 1 scored fourteen points pre-intervention and then twelve points for the post-intervention, which showed a two-point decrease. Participant 2 scored nine points during the pre-intervention and then scored seven points during the post-intervention, which showed a one-point decrease. Participant 3 scored five points during the pre-intervention and then scored zero points during the post-intervention, which showed a five-point decrease. Participant 4 scored fifteen points during the pre-intervention and then scored fourteen points post-intervention, which showed a one-point reduction. See table 1 in the table sections for a visual reference.

## CHAPTER 4

### DISCUSSION

The purpose of this study was to compare the effects of defusion and contact with the present moment on inflexible behavior with youths with Autism Spectrum Disorder. Through the use of a visual analysis and identifying specific movement within the graphs has resulted in a conclusion of data. All participants displayed a decrease in inflexible behavior within some concepts and others showed an increase in behaviors across the four weeks of intervention. Both concepts demonstrate strength, validity, and power equivalence when targeting the reduction of inflexible behaviors. After analyzing the trends in the data noted from Figures 1 through 4, defusion showed immediate effect and a consistent decreasing trend line on half the participants, participant 1 and participant 3. Contact with the present moment sessions showed effectivity and a stable decreasing trend line in two out the four participants, which was participant 2 and participant 4. Each participant within the intervention had one concept displaying a stable and consistent behavior pattern, and the other showed a variable but decreasing trend. Clinical significance was revealed across all participants and giving efficacy to the intervention as a conjunction of both components.

Within the baseline phase, there was consistency across the data points within the level, which averaged 4 to 5 inflexible behavior emissions across all participants. Participant 1 and participant 4 showed decreasing trend lines, where participant 2 and participant 3 showed a very slight increase in trend. Participant 1 and participant 3 showed very low variability and displayed a stable baseline, where participant 2 and participant 4 expressed high levels of variability.

Within the defusion phase, there was consistency across the data points within the level, which averaged 2.75 to 5 inflexible behavior emissions across all participants. Participant 1,



participant 3, and participant 4 all showed decreasing trend lines, except for participant 2 who showed a very slight increase in trend. Participant 1 and participant 3 showed very high variability, where participant 2 and participant 4 displayed low levels of variability. These results display contrasting results and a negative correlation in comparison to the baseline phase when it came to variability. All participants (participants 1, 2, and 4) except for participant 3 show immediacy of the effect when introducing the defusion phase, which provided evidence that the inference that change in the outcome measure was due to manipulation of the independent variable. Participant 1 and participant 4 displayed a low proportion of overlap and separation of data, therefore, this displayed a compelling demonstration of an effect. However, participant 2 and participant 3 display a large proportion of overlapping data, therefore, this displays significantly low demonstration for a compelling effect.

Within the contact with the present moment phase, the data points within the level averaged 2.75 to 6 inflexible behavior emissions across all participants. Participant 2 and participant 4 showed a significant decreasing trend line, where participant 1 and participant 3 showed a very increase in trend. Participant 1 and participant 3 showed very low variability, where participant 2 and participant 4 displayed high levels of variability. These results display a positive correlation in comparison to the baseline phase when it came to variability, therefore weakening its effect on behavior. Participant 1 and participant 3 show delayed effects when introducing the contact with the present moment phase, which might compromise the internal validity within this phase. Participant 2 and participant 4 show the immediate effect which provided evidence that the inference that change in the outcome measure was due to manipulating the independent variable. Participant 1, participant 2, and participant 3 displayed a high proportion of overlap. Therefore, this displayed significantly low demonstration for a

compelling effect. Participant 4 had a separation of data that showed a persuasive demonstration of an impact within this isolated individual. It is important to note again that participant 4 was the only participant who received services in person. Participant 4 was the only participant to have a session with zero instances of maladaptive behavior during a single session. This could result from inefficiently or easy ability to escape from the session to the direct contact. Compared to the telehealth sessions, the ability to escape from the session was at consistent reach due to getting up and walking away or even closing the computer.

Within the CAMM scale, all participants increased their score or stayed the same over the four-week intervention time. Increasing scores demonstrate an increased ability to utilize skills for mindfulness and acceptance. Within the AFQ-Y8 scale, all participants showed a decrease in score. This was the intended goal meaning that the psychological inflexibility was decreasing or losing power. There is a functional relationship between the two scoring questionnaires due to the positive impact across all participants. Therefore, this information provides strength and validity that this intervention as a whole could impact the scores of a CAMM and AFQ-Y8 scale.

This study had extended research within the telehealth service, augment further validity to ACT practices, and if these techniques could be translated through a form of technology medium. This extension of research brings evidence and displays data trends that create a causal relationship between defusion and contact with the present moment concepts with increasing psychological flexibility.

However, there are several limitations within this study. They all received behavioral services at the clinic, and these sessions were considered a volunteer service for them without any compensation. Another limitation could have been the low number of data points and sessions allotted throughout the intervention. There would have been more notable change if the

intervention had been carried out for a more extended period. The researcher should have implemented a follow-up to see how long the CAMM and AFQ-Y8 scores changed over time without weekly ACT practice. Due to the utilization of a multielement treatment design, a potential risk would be the carry-over effect that may occur from one intervention to another or if each session influenced the other. The results having similar trends within both interventions could be evidence of interference within the research design. An important note to make was that participant 4 had one session where they exhibited zero instances of problem behavior within a single session. This could result from the inability to escape from the session due to the setting being in an enclosed therapy room. Compared to the telehealth sessions, the ability to escape from the session was at consistent reach due to the capacity to get up and walk away or even close the computer.

“Nevertheless, there is currently no research on the efficacy of ACT training procedures at producing lasting behavior changes in young children with autism with challenging behavior during play activities” (Szabo, 2019). The current research displayed promising results in decreasing inflexible behavior through the concepts of defusion and contact with the present moment activities. Throughout this study, ACT has become a tool for a therapeutic alliance, which means that it can create a cooperative working relationship between client and therapist, which is considered an essential aspect of successful therapy. Finally, there is an apparent demand for appropriately powered sample sizes and increased intervention duration to increase validity and effectiveness. Individuals with Autism Spectrum Disorder may face challenges that require therapeutic support for symptom improvement. Not only is it important to target external behaviors but also internal behaviors as well. Individuals with ASD must have access to appropriate psychological support that can effectively address psychological difficulties.

EXHIBITS

TABLE 1

CAMM AND AFQ-Y8

<b>Participants</b>	<b>CAMM Scale (pre- intervention)</b>	<b>AFQ-Y8 (pre- intervention)</b>	<b>CAMM Scale (post- intervention)</b>	<b>AFQ-Y8 (post- intervention)</b>
Participant 1	18	14	19	12
Participant 2	18	8	24	7
Participant 3	26	5	37	0
Participant 4	22	15	22	14

TABLE 2

TABLE OF DEMOGRAPHICS

Demographic	# in sample	% of total sample
Male	4	100%
Female	0	0%
Caucasian	1	25%
Hispanic	1	25%
Asian American	1	25%
Native American	1	25%
7 years old	2	50%
8 years old	1	25%
11 years old	1	25%
Diagnosed with ASD	4	100%

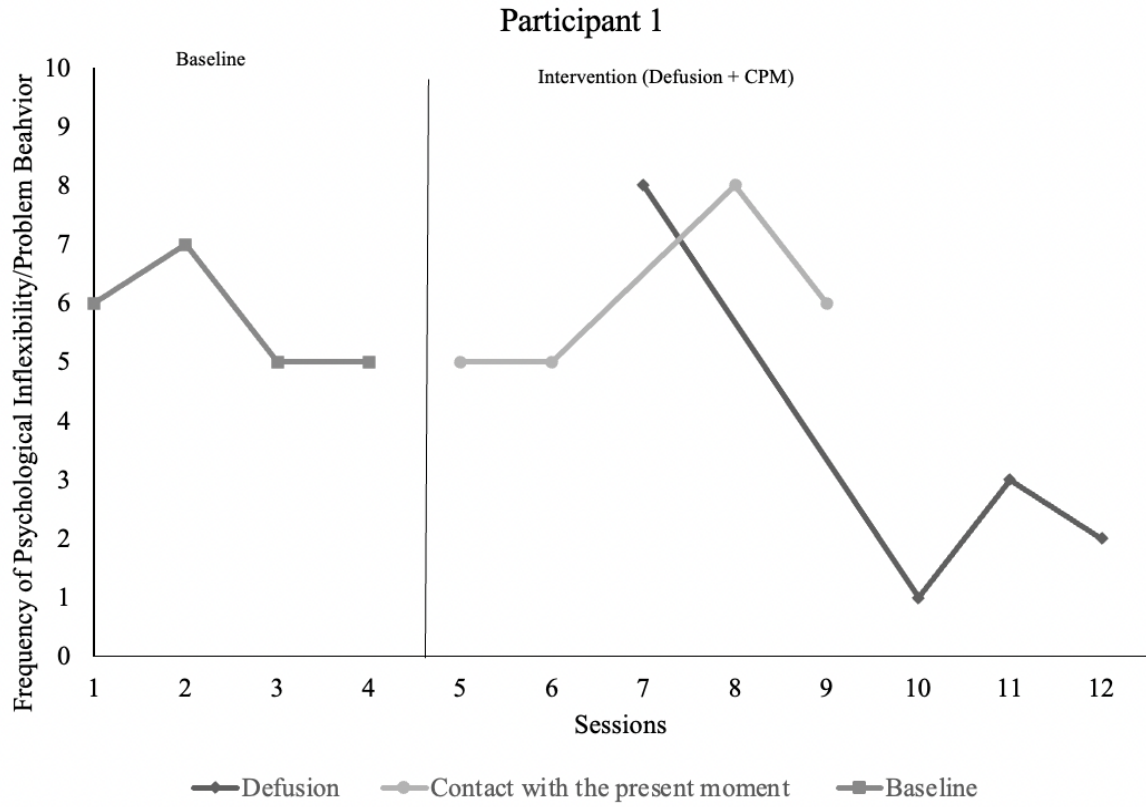


FIGURE 1  
PARTICIPANT 1

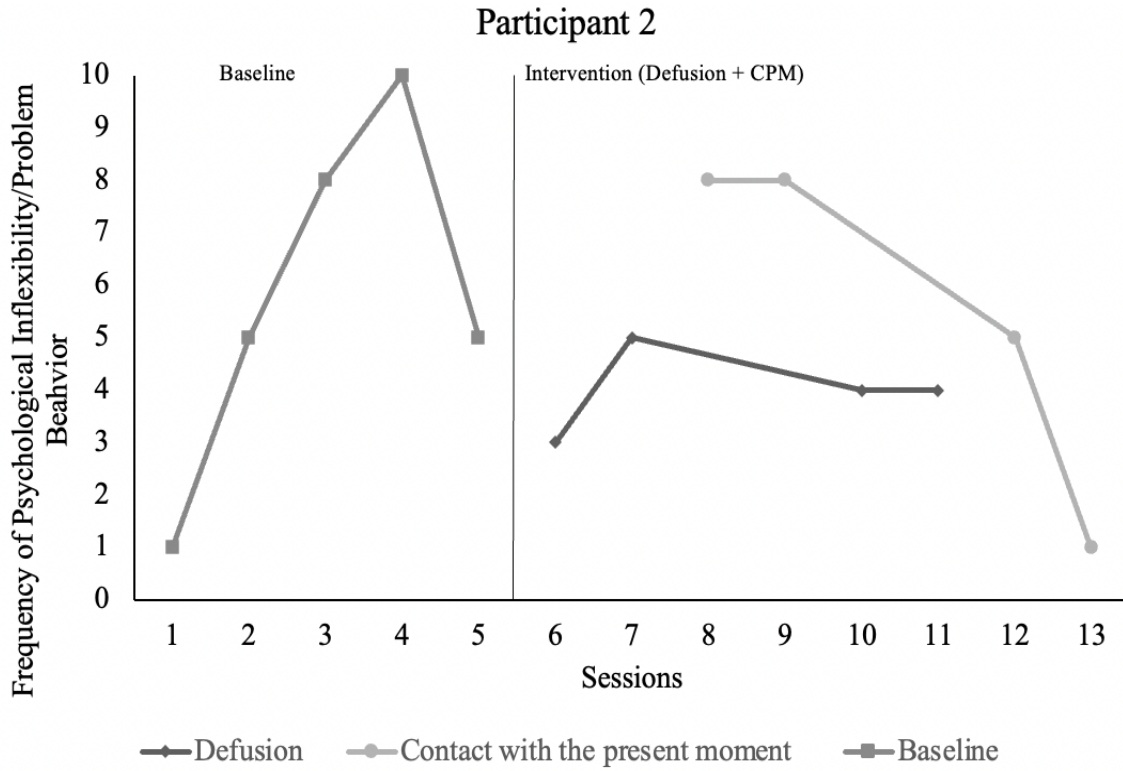


FIGURE 2  
PARTICIPANT 2

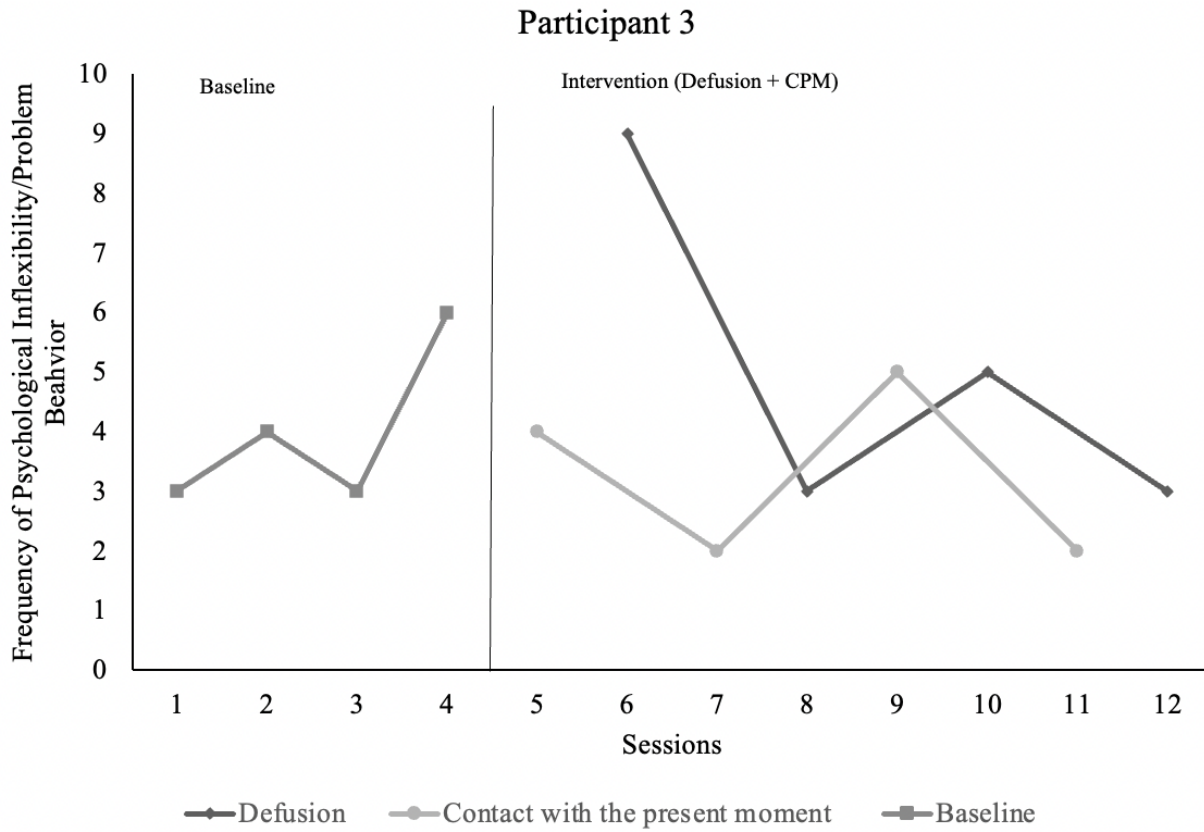


FIGURE 3

PARTICIPANT 3



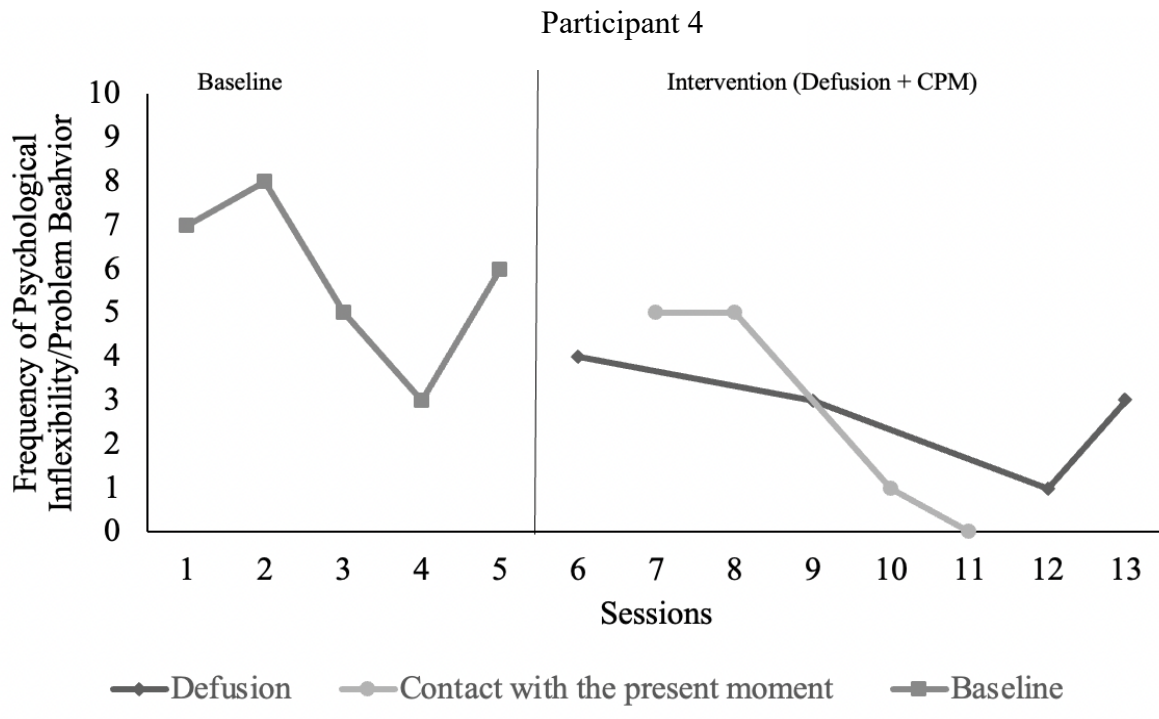


FIGURE 4  
 PARTICIPANT 4

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## APPENDIX A

### CHILD AND ADOLESCENT MINDFULNESS MEASURE SCALE (CAMM)

The following provided an example of CAMM Scale, including the Likert scale used in the current study and one item corresponding to each of the statuses, listed consecutively. For the complete scale, please refer to the following work:

Greco, L., Baer, R. A., & Smith, G. T. (2011). Assessing mindfulness in children and adolescents: Development and validation of the child and adolescent mindfulness measure (CAMM). *Psychological Assessment, 23*, 606-614.

This questionnaire is designed to measure children and adolescent's level of psychological flexibility. There are no right, or wrong answers and the participant circles the answer that best response to each statement.

0	1	2	3	4
Never	A little bit	Sometimes	A Lot	All the time

1. I get upset with myself for having feelings that don't make sense
2. At school, I walk from class to class without noticing what I'm doing.
3. I keep myself busy, so I don't notice my thoughts or feelings.

#### **CAMM: Scoring instructions**

First, reverse all scores by changing 0 to 4, 1 to 3, 3 to 1, and 4 to 0 (2 stays unchanged). Then sum all items, which are 10 items in total. Higher scores correspond to higher levels of mindfulness. (Greco, Baer, & Smith, 2011)



## APPENDIX B

### ACCEPTANCE AND FUSION QUESTIONNAIRE FOR YOUTH (AFQ-Y8)

The following provided an example of AFQ-Y8 Scale, including the Likert scale used in the current study and one item corresponding to each of the statuses, listed consecutively. For the complete scale, please refer to the following work:

Greco, L. A., Lambert, W., & Baer, R. A. (2008). Psychological inflexibility in childhood and adolescence: Development and evaluation of the Avoidance and Fusion Questionnaire for Youth. *Psychological Assessment, 20*, 93-102.

This questionnaire is designed to measure children and adolescent's level of psychological inflexibility. There are no right, or wrong answers and the participant circles the answer that best response to each statement.

0	1	2	3	4
Never	A little bit	Sometimes	A Lot	All the time

1. My life won't be good until I feel happy.
2. My thoughts and feelings mess up my life.
3. The bad things I think about myself must be true.

#### **AFQ-Y8: Scoring instructions**

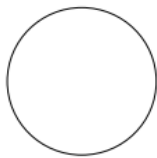
Compute the total score by summing the items, which are 8 items in total. For the AFQ-Y8, possible scores range from 0 to 32. (Greco, Lambert, & Baer, 2008)

## APPENDIX C

### VISUAL SCALE

This was the visual scale that was presented to the participants to aid in accurately responding to all questions within the questionnaire.

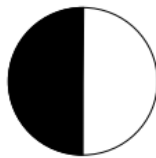
When reading the questions aloud to the child, present the visual scale to aid his/her responding.



**0: NEVER**



**1: A LITTLE BIT**



**2: SOMETIMES**



**3: A LOT**



**4: ALL THE TIME**

Dixon, M. R., Paliliunas, D. (2017). Children's psychological flexibility questionnaire: Child report.

APPENDIX D  
THESIS OUTLINE

- Baseline Session 1

GET ASSENT FORMS SIGNED AND FILL OUT AFQ-Y8 AND CAMM SCALE

- **Story: The Field Day**

- Andy smiled as he and his field day team stepped up to their last activity.

They were in the first place, and Andy could already feel the medal around his neck. "How exciting!" Mrs. Emory said. "You two teams are tied with the highest score of the day." "Tied?" Andy said. "But we beat them at the relay race." "Yes, but that was their only loss," Mrs. Emory said. "Your team also has one loss, so you are both tied for first place." Andy crossed his arms in front of his chest. He didn't want to think about the balloon toss. He'd been nervous about it all week. Andy hates getting all wet. All of a sudden Mrs. Emory noticed that she forgot the water balloon! She then said, "We're just going to have to have a hula hoop contest instead! Everyone goes grab a hula hoop and try to swing it around as long as possible! Once your hoop hits the ground, you will be disqualified. The last person hula hooping will win the event for their team." Andy's eyes widened. He'd never hula hooped before. He looked at the rest of his team. Becky seemed confident and so did Cory. They only needed one person to do well to win. "Can we start?" asked Rachelle, the other team's captain. She must have done this before because she was excited about the challenge. Mrs. Emory blew her whistle. "Begin!" Andy watched Rachelle

and mimicked everything she did. But no matter how hard he tried; the hoop wouldn't stay up. It wobbled and fell to his ankles. He stepped aside and cheered for Becky and Cory who were the only ones left to battle Rachelle. Becky sneezed, and her hoop toppled to the ground. Andy was trying so hard to not give up and win this for our team. All of a sudden, a bumblebee came hurtling towards Andy's face! He got so scared, he dropped his hula hoop, making Rachelle the winner of field day. Rachelle was still hula hooping when Mrs. Emory gave out the medals. Andy wore his second-place medal with pride as he congratulated Rachelle, the true field day champion.

○ **Reading Comprehension/Inferencing Questions:**

- 1. The second sentence of the story says: They were in the first place, and Andy could already feel the medal around his neck. What does this mean?
- Do you think Andy was a good sport or a sore loser? Explain.
- Read the following sentence from the story. Andy watched Rachelle and mimicked everything she did. Choose the best definition:
  - a. made fun of
  - b. copied
  - c. talked about
  - d. cheered for

○ **Activity:**

- In the story, “Field Day Champion,” Andy becomes so amazed by the hula hooping talent of his opponent, Rachele, that he forgets to be upset when she wins the competition. Instead, Andy learns that celebrating someone's victory is much better than being a sore loser. Tell about a time when you chose to be happy for somebody else's victory rather than being a sore loser.
  - **Game: REWARD FOR WORKING HARD OUR VERY FIRST SESSION!**
  - WATCH A FUN VIDEO / FREE CHOICE – ON YOUTUBE KIDS**
- Baseline Session 2
  - Story: **The Hidden Treasure**
    - Many years ago, a very poor man bought a plot of land. One day while he was plowing it, he came upon an iron box that was buried in the soil. When he opened it, he was astonished to discover that it was filled with gold coins, fancy jewelry, and gemstones. The man thought this belonged to someone else and he could not possibly keep all of this treasure for himself. He ran into town on his horse to share the news of what he had found. Once he arrived in town, he met with the person from whom he had bought the land and showed him the treasure. "What is this?" asked the previous owner of the plot. The man told him the story of how the treasure was found. But the previous owner refused to accept it, saying, "The treasure would have been mine if I had found it. I think it must have been hidden in the plot by my ancestors. As you have found it, it belongs to you." Finally, the two men decided to divide the treasure into two equal

parts. The man and the previous owner of the plot would each take half.

Those were the days when people were not greedy.

○ **Reading Comprehension/Inferencing Questions:**

- What did the man do right after he found the treasure?
- What lesson does this story teach?
- What did the previous owner think the man should do with the money?

○ **Activity:**

- Do you think that people today are greedier or less greedy than the characters in this story? Explain your answer.
- Is there a time where you were greedy about something? Explain if you could have done something different to be more honest.

○ **Game:** In-person – Scattergories; Over Zoom - <https://scattergoriesonline.net>

● **Baseline Session 3**

○ **Story: Locker Out**

- Trevor walked home from the bus stop. It was the first time his parents wouldn't be home to greet him after school. They had a meeting with his older brother's principal at the high school, and Trevor begged them to let him stay home. He was excited to finally have the house to himself. He took his key from his pocket and opened the door. Trevor was greeted by his two German shepherds, Molly and Ajax. "Hey, guys. Just me." Trevor locked the front door behind him like he'd promised his parents he would. He took his key from his pocket and opened the door. Trevor was greeted by his two German shepherds, Molly and Ajax. "Hey, guys. Just me."

Trevor locked the front door behind him like he'd promised his parents he would. He put his key on the table next to the couch and tossed his book bag down on the floor. "What should I do first?" Trevor turned on the TV and got a snack from the kitchen. After watching a few shows and eating more than he should, Trevor was bored. He looked at the two dogs. "Want to go outside and play?" He picked up two tennis balls and walked to the sliding glass door, leading to the deck. He slid the wooden bar out of the door and placed it on the floor. His mother insisted on keeping the bar in the door even though there was already a lock. She said it provided extra protection. The dogs pushed their way outside and Trevor ran to catch up, slamming the door behind him. He chased the dogs all around the house. When he got tired, he threw the tennis balls high in the air. "Come on, Molly, get the ball." Molly jumped up and got it before it bounced. "Good girl!" Trevor threw the next ball to Ajax. "Good boy catches it as Molly did." Several throws later, Trevor and the dogs were tired and cold. "Time to go inside and warm up." Trevor led the dogs to the deck and tugged on the back door. It wouldn't budge. "Huh?" He peeked in and saw the bar was back in the door. His cat, Misha, was lying up against it, sleeping in the sunlight shining through the sliding glass door. "No! We're locked out." He ran to the front door and tugged on it. Locked. He tried all the windows on the first floor. Locked. Trevor sat on the back deck and waited until his parents came home. His mom opened the sliding glass door. "What are you doing out here?" "Misha locked us out." Trevor

rushed inside and to the fireplace to warm up. "Being home alone wasn't exactly what you thought it would be, huh?" Mom asked. "I know one thing for sure," Trevor said. "What's that?" "Next time I'm home alone and I go out to play with the dogs, I'm bringing my house key."

○ **Reading Comprehension/Inferencing Questions:**

- Where did Trevor's parents have to be instead of home to let him inside?
- How did Trevor feel about being home alone?
- How did Trevor feel about being locked out of the house?

○ **Activity:**

- In the story, "Locked Out," Trevor is home alone for the first time. If you were Trevor's parents, what rules would you put in place for Trevor when he is home alone? List four "Home Alone" rules and explain why each one is important.

○ **Game:**

- In-person – Trivia
- Over Zoom -

<https://www.randomtriviagenerator.com/?fbclid=IwAR3mVep1dcLeuN1mxmfoSjKf8iLFwGz3qCV9TMTonNkrkCwuM9ggHnUFtnE#!/>

● **Baseline Session 4**

○ **Story/Video: Understanding the basic school rules -**

<https://www.youtube.com/watch?v=RyLzsQKFpB0>

○ **Reading Comprehension/Inferencing Questions:**

- What do you do when you want to speak in class?



- What is called if someone is not being nice to someone else?
  - What do you do if you see bullying?
  - What are some polite words?
- **Activity:**
  - How is school going for you?
  - Is it difficult? Boring? Maybe it is fun sometimes?
  - What do you do if you see a bully at school?
- **Game:**
  - In-person – Pictionary
  - Over Zoom – <https://randomwordgenerator.com/pictionary.php>
- Baseline Session 5 (only 2 out of 4 participants were introduced to baseline session 5 due to variability in data)
  - **Story:** The boy who cried wolf
  - **Reading Comprehensions/Inferencing Questions:**
    - What was the main point or moral of the story?
    - Why was it wrong for the boy who cried wolf?
    - What would you have done differently?
    - Have you ever lied?
  - **Activity:**
    - What happened after you lied? Did you get caught or did you get away with it? (if you haven't been caught, what do you think should have happened?) Take away – Come up with 3 main points.

## Participant 1

### Session 1:

<p><b>Goal: CONTACT WITH THE PRESENT MOMENT – <u>Magnifying Glass</u></b>– writing down a problem you are facing and look at it without and with the magnifying glass – if you don’t have a magnifying glass, use a thin piece of tissue paper to look through at the words.</p>
<p><b>Materials Needed:</b> magnifying glass.</p>
<p><b>Description and Introduction:</b> What is one thought or worry that you place under a magnifying glass and it gets bigger and worse? If you could take something good or happy that happened to you and put it under a magnifying glass to make it even BETTER, what would it be?</p>
<p><b>Metaphor:</b> When we look at things through a magnifying glass small stuffy gets big. Sometimes when you feel mad or bad we use a magnifying glass and it makes our thoughts into something bigger than they need to be.</p>
<p><b>Activity:</b> Write a problem that you are experiencing or something that makes you upset on your hand. Sum it up in one word. Use a marker or a pen. Then use a magnifying glass to see all details in your word. Look at your word with and without the magnifying glass. How are they different and how are they the same? Does the way you see it change?</p>
<p><b>Discussion:</b> How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?</p>

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Music**– listening to music and write down what you hear (individual instruments), feels, taste, and smell in the music (2 times)

**Materials Needed:** paper, pencil, able to listen to music (computer)

**Description and Introduction:** Let's think about music and what your favorite song is at the moment. What is your favorite song? What is your favorite part of the song? Is it the beat? The lyrics? The singer's voice? The different instruments? What makes this song different from all of the other songs that you know?

**Metaphor:** We all have a favorite song. We may like it because we can relate to the lyrics. We may like it because it is already our favorite band. We may like it because of the beat or how all the instruments come together in perfect unison. We also may like it because it is easy to dance to. However, if we do not like the song, it may just sound like noise, you just want to turn it off, or you even get frustrated by the sound. Why is this? What is your least favorite song that you do not like? How is it different from your favorite song?

**Activity:** Listen to a piece of music, a favorite song, and least favorite song. Write down what you heard in the music. Be mindful... Open up all of your senses? What did you hear, feel, taste, and smell in that music?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Session 2:**

**Goal: DEFUSION – Building your fear**– building up to something you fear out of clay, you are the creator, but also the destroyer. You can observe your fear/creation and you can choose to let it be or you can squish it.

**Materials Needed:** Playdoh

**Description and Introduction:** What are two ways that you try to tear apart the fears that you have in life? Do these ways ever really make the fear go away?

**Metaphor:** We often spend tons of time and energy trying to avoid and break down the things that we fear or thoughts we hate having. What if we had all that time back that we wasted trying to fight and destroy the things that make us sad or mad?

**Activity:** Gather some play-doh and spend about 10 minutes building one of your fears or thoughts into an actual sculpture. On a scale of 1-10 (10 is the worst thought ever), how bad is this thought to you? (before the sculpture). On a scale of 1-10 (10 being the worst) how bad is this thought to you? (after sculpture).

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Thoughts**– saying 3 thoughts that are on your mind a lot and thoughts you try to ignore, then drawing your thoughts.

**Materials Needed:** Paper and markers/colored pencils

**Description and Introduction:** What three thoughts are in your mind a lot? What are those thoughts not allowing you to think about as much as you like?

**Metaphor:** What is in your mind sometimes keeps you from doing the things you want to do. Sometimes your mind is so full of stuff, that it messes you up. It makes you forget the stuff you want to have or want to think about. Is your mind full of stuff? Or is it “mindful” of stuff?

**Activity:** Fold paper in half. Draw on the left side of your mind full of thoughts. Draw on the right side, your mind free from all of those thoughts, and instead allowing you to do what you want.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Session 3:**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Investigating our mouth**– Eating snacks and analyzing all of the sensory aspects of eating and talking about the sensations of the snack. NO saliva or biohazard will be used within this exercise.

**Materials Needed:** whatever snack available to the participant, a computer, paper, and pencil.

**Description and Introduction:** Take half of your snack and eat it like you always do. Write 2 things about your snack (taste, smell, or feel). Eat the next half of your snack very slowly. So, slowly you have to stare at every piece for 1 minute before you eat it. Then you need to keep each piece in your mouth for 1 minute before you swallow.

**Metaphor:** Often we just eat and do not even think about what we are eating. Maybe that is sometimes why we eat too much and feel sick. Eat your snack and think about the food you are eating. Where did it come from? How far did it travel? How many people touched it before it reached your hands?

**Activity:** Get on the computer and become a snack detective. Find out where your favorite snack came from. Where did it come from (city and state)? How far did it travel (miles to your table)? How many people touched it before it reached your hands (guess)? Was it grown on the earth or made by chemicals and machines? Draw the path of your food from its "birthplace" to your mouth.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – The mental appreciation –** Thanking yourself and writing thank you letters.

**Materials Needed:** paper and markers

**Description and Introduction:** Thank your mind when you notice it butting in with worries and opinions; show aesthetic appreciation for its products (e.g., “You are doing a great job worrying today! Thanks for the input!”) This is not sarcasm ... after all, the word machine is doing exactly what it was designed to do all of those thousands of years ago: “problem solve” and avoid danger.

**Metaphor:** You are a worthy human being. Your thoughts, feelings, and emotions are always justified. You just have to be observant of what feelings and thoughts make you happy and what makes you feel sad. Acknowledge all feelings and thoughts but do not hold on to them forever. See them, learn from them, and then move on. You are strong and powerful. You are more than capable of getting through these hard thoughts and feelings when you are upset. You can do it. You have a team of support behind you, every step of the way.

**Activity:** Writing thank you letters to yourself.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

#### **Session 4:**

#### **FILL OUT AFQ-Y8 AND CAMM SCALE BEFORE LEAVING SESSION**

**Goal: DEFUSION – The bear and the blueberry bush** – You can process this metaphor by asking what the participant thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce



offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Materials Needed:** Paper and markers

**Description and Introduction:** You can process this metaphor by asking what your client thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Metaphor:** Imagine that, many millennia ago, one of your early ancestors is looking out of the cave one morning, along with a friend who is with him. He sees a dark shadow on a hill across the way and begins to wonder what it is. It's too far away to be sure. His friend is convinced it is a blueberry bush and suggests going out to pick berries. Your ancestor, on the other hand, tended to be a bit more cautious and is worried it might be a bear. The friend decides to go out and get some berries, but your ancestor chooses to stay inside the cave, just not sure enough what that dark shape could be. The friend never returns.

**Activity:** The participant will make a family tree. They will go as far back as they can and fill in as much as they can within their tree. The researcher will then ask what if your great-grandma decided to be adventurous like the man in the metaphor and go off to be with a different family. What does that mean for you? We will ponder on this thought and truly appreciate our presence.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – Paper Dragon** – thinking of dragon thoughts and writing them down on paper, then making the paper into something new that is not as scary (ex. Teach origami folding)

**Materials Needed:** Paper and pencil.

**Description and Introduction:** What are two dragon thoughts you have that control you? Rename these thoughts so they seem almost as weak as a paper dragon?

**Metaphor:** The word "dragon" makes people think of very big scary fire-breathing beasts that are powerful. Some of your thoughts are like dragons. These dragon-thoughts control you and have lost their powers too. Yet, not all

dragons are powerful. Putting the word "paper" in front of the dragon makes this mean powerful beast seems a bit silly. He had no more power.

**Activity:** Get a sheet of paper and write on it your own "dragon thought." Once done, fold it up to form your own "paper dragon." Does this evil powerful thought seem to still breathe the fire it once did? Has it become something a little less controlling?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

## **Participant 2**

### **Session 1:**

**Goal: DEFUSION – Paper Dragon** – thinking of dragon thoughts and writing them down on paper, then making the paper into something new that is not as scary (ex. Teach origami folding)

**Materials Needed:** Paper and pencil.

**Description and Introduction:** What are two dragon thoughts you have that control you? Rename these thoughts so they seem almost as weak as a paper dragon?

**Metaphor:** The word "dragon" makes people think of very big scary fire-breathing beasts that are powerful. Some of your thoughts are like dragons. These dragon-thoughts control you and have lost their powers too. Yet, not all dragons are powerful. Putting the word "paper" in front of the dragon makes this mean powerful beast seem a bit silly. He had no more power.

**Activity:** Get a sheet of paper and write on it your own "dragon thought." Once done, fold it up to form your own "paper dragon." Does this evil powerful thought seem to still breathe the fire it once did? Has it become something a little less controlling?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – Building your fear**– building up to something you fear out of clay, you are the creator, but also the destroyer. You can observe your fear/creation and you can choose to let it be or you can squish it.

**Materials Needed:** Playdoh

**Description and Introduction:** What are two ways that you try to tear apart the fears that you have in life? Do these ways ever really make the fear go away?

**Metaphor:** We often spend tons of time and energy trying to avoid and break down the things that we fear or thoughts we hate having. What if we had all that time back that we wasted trying to fight and destroy the things that make us sad or mad?

**Activity:** Gather some play-doh and spend about 10 minutes building one of your fears or thoughts into an actual sculpture. On a scale of 1-10 (10 is the worst thought ever), feelings how bad is this thought to you? (before the sculpture). On a scale of 1-10 (10 being the worst) how bad is this thought to you? (after sculpture).

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

## **Session 2:**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Music** – listening to music and write down what you hear (individual instruments), feel, taste, and smell in the music (2 times)

**Materials Needed:** paper, pencil, able to listen to music (computer)

**Description and Introduction:** Let's think about music and what your favorite song is at the moment. What is your favorite song? What is your favorite part of the song? Is it the beat? The lyrics? The singer's voice? The

different instruments? What makes this song different from all of the other songs that you know?

**Metaphor:** We all have a favorite song. We may like it because we can relate to the lyrics. We may like it because it is already our favorite band. We may like it because of the beat or how all the instruments come together in perfect unison. We also may like it because it is easy to dance to. However, if we do not like the song, it may just sound like noise, you just want to turn it off, or you even get frustrated by the sound. Why is this? What is your least favorite song that you do not like? How is it different from your favorite song?

**Activity:** Listen to a piece of music, a favorite song, and least favorite song. Write down what you heard in the music. Be mindful... Open up all of your senses? What did you hear, feel, taste, and smell in that music?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: CONTACT WITH THE PRESENT MOMENT – Magnifying Glass**– writing down a problem you are facing and look at it without and with the magnifying glass – if you don't have a magnifying glass, use a thin piece of tissue paper to look through at the words.

**Materials Needed:** magnifying glass.

**Description and Introduction:** What is one thought or worry that you place under a magnifying glass and it gets bigger and worse? If you could take something good or happy that happened to you and put it under a magnifying glass to make it even BETTER, what would it be?

**Metaphor:** When we look at things through a magnifying glass small stuffy gets big. Sometimes when you feel mad or bad we use a magnifying glass and it makes our thoughts into something bigger than they need to be.

**Activity:** Write a problem that you are experiencing or something that makes you upset on your hand. Sum it up in one word. Use a marker or a pen. Then magnifying glass to see all details in your word. Look at your word with and without the magnifying glass. How are they different and how are they the same? Does the way you see it change?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Session 3:**

**Goal: DEFUSION – The mental appreciation –** Thanking yourself and writing thank you letters.

**Materials Needed:** paper and markers

**Description and Introduction:** Thank your mind when you notice it butting in with worries and opinions; show aesthetic appreciation for its products (e.g., “You are doing a great job worrying today! Thanks for the input!”) This is not sarcasm ... after all, the word machine is doing exactly what it was designed to do all of those thousands of years ago: “problem solve” and avoid danger.

**Metaphor:** You are a worthy human being. Your thoughts, feelings, and emotions are always justified. You just have to be observant of what feelings and thoughts make you happy and what makes you feel sad. Acknowledge all feelings and thoughts but do not hold on to them forever. See them, learn from them, and then move on. You are strong and powerful. You are more than capable of getting through these hard thoughts and feelings when you are upset. You can do it. You have a team of support behind you, every step of the way.

**Activity:** Writing thank you letters to yourself.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?



**Goal: DEFUSION – The bear and the blueberry bush** – You can process this metaphor by asking what the participant thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Materials Needed:** Paper and markers.

**Description and Introduction:** You can process this metaphor by asking what your client thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Metaphor:** Imagine that, many millennia ago, one of your early ancestors is looking out of the cave one morning, along with a friend who is with him. He sees a dark shadow on a hill across the way and begins to wonder what it is. It's too far away to be sure. His friend is convinced it is a blueberry

bush and suggests going out to pick berries. Your ancestor, on the other hand, tended to be a bit more cautious and is worried it might be a bear. The friend decides to go out and get some berries, but your ancestor chooses to stay inside the cave, just not sure enough what that dark shape could be. The friend never returns.

**Activity:** The participant will make a family tree. They will go as far back as they can and fill in as much as they can within their tree. The researcher will then ask what if your great-grandma decided to be adventurous like the man in the metaphor and go off to be with a different family. What does that mean for you? We will ponder on this thought and truly appreciate our presence.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

#### **Session 4:**

#### **FILL OUT AFQ-Y8 AND CAMM SCALE BEFORE LEAVING SESSION**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Investigating our mouth**– Eating snacks and analyzing all of the sensory aspects of eating and talking about the sensations of the snack. NO saliva or biohazard will be used within this exercise.

**Materials Needed:** whatever snack available to the participant, a computer, paper, and pencil.

**Description and Introduction:** Take half of your snack and eat it like you always do. Write 2 things about your snack (taste, smell, or feel). Eat the next half of your snack very slowly. So, slowly you have to stare at every piece for 1 minute before you eat it. Then you need to keep each piece in your mouth for 1 minute before you swallow.

**Metaphor:** Often we just eat and do not even think about what we are eating. Maybe that is sometimes why we eat too much and feel sick. Eat your snack and think about the food you are eating. Where did it come from? How far did it travel? How many people touched it before it reached your hands?

**Activity:** Get on the computer and become a snack detective. Find out where your favorite snack came from. Where did it come from (city and state)? How far did it travel (miles to your table)? How many people touched it before it reached your hands (guess)? Was it grown on the earth or made by chemicals and machines? Draw the path of your food from its "birthplace" to your mouth.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Thoughts**– saying 3 thoughts that are on your mind a lot and thoughts you try to ignore, then drawing your thoughts.

**Materials Needed:** Paper and markers/colored pencils.

**Description and Introduction:** What three thoughts are in your mind a lot? What are those thoughts not allowing you to think about as much as you like?

**Metaphor:** What is in your mind sometimes keeps you from doing the things you want to do. Sometimes your mind is so full of stuff, that it messes you up. It makes you forget the stuff you want to have or want to think about. Is your mind full of stuff? Or is it “mindful” of stuff?

**Activity:** Fold paper in half. Draw on the left side of your mind full of thoughts. Draw on the right side, your mind free from all of those thoughts, and instead allowing you to do what you want.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

### **Participant 3**

#### **Session 1:**

<p><b>Goal: CONTACT WITH THE PRESENT MOMENT – <u>Magnifying Glass</u></b>– writing down a problem you are facing and look at it without and with the magnifying glass – if you don't have a magnifying glass, use a thin piece of tissue paper to look through at the words.</p>
<p><b>Materials Needed:</b> magnifying glass.</p>
<p><b>Description and Introduction:</b> What is one thought or worry that you place under a magnifying glass, and it gets bigger and worse? If you could take something good or happy that happened to you and put it under a magnifying glass to make it even BETTER, what would it be?</p>
<p><b>Metaphor:</b> When we look at things through a magnifying glass, small stuff gets big. Sometimes when you feel mad or bad, we use a magnifying glass, making our thoughts into something bigger than they need to be.</p>
<p><b>Activity:</b> Write a problem that you are experiencing or something that makes you upset on your hand. Sum it up in one word. Use a marker or a pen. Then magnifying glass to see all details in your word. Look at your word with and without the magnifying glass. How are they different, and how are they the same? Does the way you see it change?</p>
<p><b>Discussion:</b> How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?</p>

<p><b>Goal: DEFUSION – <u>Building your fear</u></b>– building up to something you fear out of clay. You are the creator but also the destroyer. You can observe your fear/creation, and you can choose to let it be or squish it.</p>
<p><b>Materials Needed:</b> Playdoh</p>
<p><b>Description and Introduction:</b> What are two ways to tear apart the fears you have in life? Do these ways ever really make the fear go away?</p>
<p><b>Metaphor:</b> We often spend tons of time and energy trying to avoid and break down the things that we fear or thoughts we hate having. What if we had all that time back that we wasted trying to fight and destroy the things that make us sad or mad?</p>
<p><b>Activity:</b> Gather some play-doh and spend about 10 minutes building one of your fears or thoughts into an actual sculpture. On a scale of 1-10 (10 is the worst thought ever), how bad is this thought to you? (before the sculpture). On a scale of 1-10 (10 being the worst), how bad is this thought to you? (after statue).</p>
<p><b>Discussion:</b> How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?</p>

**Session 2:**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Music**– listening to music and write down what you hear (individual instruments), feel, taste, and smell in the music (2 times)

**Materials Needed:** paper, pencil, able to listen to music (computer)

**Description and Introduction:** Let's think about music and what your favorite song is at the moment. What is your favorite song? What is your favorite part of the song? Is it the beat? The lyrics? The singer's voice? The different instruments? What makes this song different from all of the other songs that you know?

**Metaphor:** We all have a favorite song. We may like it because we can relate to the lyrics. We may like it because it is already our favorite band. We may like it because of the beat or how all the instruments come together in perfect unison. We also may like it because it is easy to dance. However, if we do not like the song, it may just sound like noise, you just want to turn it off, or you even get frustrated by the sound. Why is this? What is your least favorite song that you do not like? How is it different from your favorite song?

**Activity:** Listen to a piece of music, a favorite song, and least favorite song. Write down what you heard in the music. Be mindful. Open up all of your senses? What did you hear, feel, taste, and smell in that music?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – Paper Dragon** – thinking of dragon thoughts and writing them down on paper, then making the paper into something new that is not as scary (ex. Teach origami folding)

**Materials Needed:** Paper and pencil.

**Description and Introduction:** What are two dragon thoughts you have that control you? Rename these thoughts, so they seem almost as weak as a paper dragon?

**Metaphor:** The word "dragon" makes people think of massive scary fire-breathing beasts that are powerful. Some of your thoughts are like dragons. These dragon-thoughts control you and have lost their powers too. Yet, not all dragons are powerful. Putting the word "paper" in front of the dragon makes this mean powerful beast seems a bit silly. He had no more power.

**Activity:** Get a sheet of paper and write on it your own "dragon thought." Once done, fold it up to form your own "paper dragon." Does this powerful evil thought seem to breathe the fire still it once did? Has it become something a little less controlling?



**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Session 3:**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Thoughts**– saying three thoughts that are on your mind a lot and thoughts you try to ignore, then drawing your thoughts.

**Materials Needed:** Paper and markers/colored pencils.

**Description and Introduction:** What three thoughts are in your mind a lot? What are those thoughts not allowing you to think about as much as you like?

**Metaphor:** What is in your mind sometimes keeps you from doing the things you want to do. Sometimes your mind is so full of stuff that it messes you up. It makes you forget the items you wish to have or want to think about. Is your mind full of stuff? Or is it “mindful” of stuff?

**Activity:** Fold paper in half. Draw on the left side of your mind full of thoughts. Draw on the right side, your mind free from all of those thoughts, and instead allowing you to do what you want.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – The bear and the blueberry bush** – You can process this metaphor by asking what the participant thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Materials Needed:** Paper and markers

**Description and Introduction:** You can process this metaphor by asking what your client thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Metaphor:** Imagine that, many millennia ago, one of your early ancestors is looking out of the cave one morning, along with a friend who is with him. He sees a dark shadow on a hill across the way and begins to wonder what it is. It's too far away to be sure. His friend is convinced it is a blueberry bush and suggests going out to pick berries. Your ancestor, on the other hand, tended to be a bit more cautious and is worried it might be a bear. The friend decides to go out and get some berries, but your ancestor chooses to stay inside the cave, just not sure enough what that dark shape could be. The friend never returns.

**Activity:** The participant will make a family tree. They will go as far back as they can and fill in as much as they can within their tree. The researcher will then ask what if your great-grandma decided to be adventurous like the man in the metaphor and go off to be with a different family. What does that mean for you? We will ponder on this thought and truly appreciate our presence.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Session 4:**

**FILL OUT AFQ-Y8 AND CAMM SCALE BEFORE LEAVING SESSION**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Investigating our mouth**– Eating snacks and analyzing all of the sensory aspects of eating and talking about the sensations of the snack. NO saliva or biohazard will be used within this exercise.

**Materials Needed:** whatever snack available to the participant, a computer, paper, and pencil.

**Description and Introduction:** Take half of your snack and eat it like you always do. Write 2 things about your snack (taste, smell, or feel). Eat the next half of your snack very slowly. So, slowly you have to stare at every piece for 1 minute before you eat it. Then you need to keep each piece in your mouth for 1 minute before you swallow.

**Metaphor:** Often we just eat and do not even think about what we are eating. Maybe that is sometimes why we eat too much and feel sick. Eat your snack and think about the food you are eating. Where did it come from? How far did it travel? How many people touched it before it reached your hands?

**Activity:** Get on the computer and become a snack detective. Find out where your favorite snack came from. Where did it come from (city and state)? How far did it travel (miles to your table)? How many people touched it before it reached your hands (guess)? Was it grown on fire-breathing the earth or made

by chemicals and machines? Draw the path of your food from its "birthplace" to your mouth.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – The mental appreciation** – Thanking yourself and writing thank you letters.

**Materials Needed:** paper and markers

**Description and Introduction:** Thank your mind when you notice it butting in with worries and opinions; show aesthetic appreciation for its products (e.g., “You are doing a great job worrying today! Thanks for the input!”) This is not sarcasm ... after all, the word machine is doing exactly what it was designed to do all of those thousands of years ago: “problem solve” and avoid danger.

**Metaphor:** You are a worthy human being. Your thoughts, feelings, and emotions are always justified. You just have to be observant of what feelings and thoughts make you happy and what makes you feel sad. Acknowledge all feelings and thoughts but do not hold on to them forever. See them, learn from them, and then move on. You are strong and powerful. You are more than

capable of getting through these hard thoughts and feelings when you are upset. You can do it. You have a team of support behind you, every step of the way.

**Activity:** Writing thank you letters to yourself.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

#### **Participant 4**

##### **Session 1:**

**Goal: DEFUSION – Building your fear**– building up to something you fear out of clay, you are the creator, but also the destroyer. You can observe your fear/creation and you can choose to let it be or you can squish it.

**Materials Needed:** Playdoh

**Description and Introduction:** What are two ways that you try to tear apart the fears that you have in life? Do these ways ever really make the fear go away?

**Metaphor:** We often spend tons of time and energy trying to avoid and break down the things that we fear or thoughts we hate having. What if we had all that time back that we wasted trying to fight and destroy the things that make us sad or mad?

**Activity:** Gather some play doh and spend about 10 minutes building one of your fears or thoughts into an actual sculpture. On a scale of 1-10 (10 is the worst thought ever), how bad is this thought to you? (before the sculpture). On a scale of 1-10 (10 being the worst) how bad is this thought to you? (after sculpture).

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: CONTACT WITH THE PRESENT MOMENT – Magnifying Glass**– writing down a problem you are facing and look at it without and with the magnifying glass – if you don't have a magnifying glass, use a thin piece of tissue paper to look through at the words.

**Materials Needed:** magnifying glass

**Description and Introduction:** What is one thought or worry that you place under a magnifying glass and it gets bigger and worse? If you could take something good or happy that happened to you and put it under a magnifying glass to make it even BETTER, what would it be?

**Metaphor:** When we look at things through a magnifying glass small stuffy gets big. Sometimes when you feel mad or bad we use a magnifying glass and it makes our thoughts into something bigger than they need to be.

**Activity:** Write a problem that you are experiencing or something that makes you upset on your hand. Sum it up in one word. Use a marker or a pen. Then magnifying glass to see all details in your word. Look at your word with and without the magnifying glass. How are they different and how are they the same? Does the way you see it change?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

## **Session 2:**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Music**– listening to music and write down what you hear (individual instruments), feel, taste, and smell in the music (2 times)

**Materials Needed:** paper, pencil, able to listen to music (computer)

**Description and Introduction:** Let's think about music and what your favorite song is at the moment. What is your favorite song? What is your favorite part of the song? Is it the beat? The lyrics? The singer's voice? The different instruments? What makes this song different from all of the other songs that you know?



**Metaphor:** We all have a favorite song. We may like it because we can relate to the lyrics. We may like it because it is already our favorite band. We may like it because of the beat or how all the instruments come together in perfect unison. We also may like it because it is easy to dance to. However, if we do not like the song, it may just sound like noise, you just want to turn it off, or you even get frustrated by the sound. Why is this? What is your least favorite song that you do not like? How is it different from your favorite song?

**Activity:** Listen to a piece of music, a favorite song, and least favorite song. Write down what you heard in the music. Be mindful... Open up all of your senses? What did you hear, feel, taste, and smell in that music?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – Paper Dragon** – thinking of dragon thoughts and writing them down on paper, then making the paper into something new that is not as scary (ex. Teach origami folding)

**Materials Needed:** Paper and pencil

**Description and Introduction:** What are two dragon thoughts you have that control you? Rename these thoughts so they seem almost as weak as a paper dragon?

**Metaphor:** The word "dragon" makes people think of very big scary fire-breathing beasts that are powerful. Some of your thoughts are like dragons. These dragon-thoughts control you and have lost their powers too. Yet, not all dragons are powerful. Putting the word "paper" in front of the dragon makes this mean powerful beast seem a bit silly. He had no more power.

**Activity:** Get a sheet of paper and write on it your own "dragon thought." Once done, fold it up to form your own "paper dragon." Does this evil powerful thought seem to still breathe the fire it once did? Has it become something a little less controlling?

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

### **Session 3:**

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Investigating our mouth**– Eating snacks and analyzing all of the sensory aspects of eating and talking about the sensations of the snack. NO saliva or biohazard will be used within this exercise.

**Materials Needed:** whatever snack available to the participant, a computer, paper, and pencil.

**Description and Introduction:** Take half of your snack and eat it like you always do. Write 2 things about your snack (taste, smell, or feel). Eat the next half of your snack very slowly. So, slowly you have to stare at every piece for 1 minute before you eat it. Then you need to keep each piece in your mouth for 1 minute before you swallow.

**Metaphor:** Often we just eat and do not even think about what we are eating. Maybe that is sometimes why we eat too much and feel sick. Eat your snack and think about the food you are eating. Where did it come from? How far did it travel? How many people touched it before it reached your hands?

**Activity:** Get on the computer and become a snack detective. Find out where your favorite snack came from. Where did it come from (city and state)? How far did it travel (miles to your table)? How many people touched it before it reached your hands (guess)? Was it grown on the earth or made by chemicals and machines? Draw the path of your food from its "birthplace" to your mouth.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: CONTACT WITH THE PRESENT MOMENT –**

**Mindfulness in Thoughts**– saying 3 thoughts that are on your mind a lot and thoughts you try to ignore, then drawing your thoughts.

**Materials Needed:** Paper and markers/colored pencils

**Description and Introduction:** What three thoughts are in your mind a lot? What are those thoughts not allowing you to think about as much as you like?

**Metaphor:** What is in your mind sometimes keeps you from doing the things you want to do. Sometimes your mind is so full of stuff, that it messes you up. It makes you forget the stuff you want to have or want to think about. Is your mind full of stuff? Or is it “mindful” of stuff?

**Activity:** Fold paper in half. Draw on the left side of your mind full of thoughts. Draw on the right side, your mind free from all of those thoughts, and instead allowing you to do what you want.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Session 4:**

**FILL OUT AFQ-Y8 AND CAMM SCALE BEFORE LEAVING SESSION**

**Goal: DEFUSION – The mental appreciation –** Thanking yourself and writing thank you letters.

**Materials Needed:** paper and markers

**Description and Introduction:** Thank your mind when you notice it butting in with worries and opinions; show aesthetic appreciation for its products (e.g., “You are doing a great job worrying today! Thanks for the input!”) This is not sarcasm ... after all, the word machine is doing exactly what it was designed to do all of those thousands of years ago: “problem solve” and avoid danger.

**Metaphor:** You are a worthy human being. Your thoughts, feelings, and emotions are always justified. You just have to be observant of what feelings and thoughts make you happy and what makes you feel sad. Acknowledge all feelings and thoughts but do not hold on to them forever. See them, learn from them, and then move on. You are strong and powerful. You are more than capable of getting through these hard thoughts and feelings when you are upset. You can do it. You have a team of support behind you, every step of the way.

**Activity:** Writing thank you letters to yourself.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

**Goal: DEFUSION – The bear and the blueberry bush** – You can process this metaphor by asking what the participant thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Materials Needed:** Paper and markers

**Description and Introduction:** You can process this metaphor by asking what your client thinks might have happened to us as a species if this kind of scenario repeated itself over and over, and only the more cautious of our early ancestors tended to survive. What you want to pull out here is that those of us who are around today probably have an evolutionary bias toward caution. Early humans who made more reckless choices in the face of ambiguity were less likely to be around to produce offspring. Once your client gets this, having an anxious mind becomes normalized and easier to accept.

**Metaphor:** Imagine that, many millennia ago, one of your early ancestors is looking out of the cave one morning, along with a friend who is with him. He sees a dark shadow on a hill across the way and begins to wonder what it is. It's too far away to be sure. His friend is convinced it is a blueberry

bush and suggests going out to pick berries. Your ancestor, on the other hand, tended to be a bit more cautious and is worried it might be a bear. The friend decides to go out and get some berries, but your ancestor chooses to stay inside the cave, just not sure enough what that dark shape could be. The friend never returns.

**Activity:** The participant will make a family tree. They will go as far back as they can and fill in as much as they can within their tree. The researcher will then ask what if your great-grandma decided to be adventurous like the man in the metaphor and go off to be with a different family. What does that mean for you? We will ponder on this thought and truly appreciate our presence.

**Discussion:** How are you feeling? What did you think of this topic? Did you like this topic? Did you like the activity? Will you use these ideas or techniques on your own?

APPENDIX E

ABC DATA (ANTIDOTAL)

<b>Participant</b>	<b>Antecedent</b>	<b>Behavior</b>	<b>Consequence</b>
Participant 1	Asked a question about a song that they do not like.	Attempted to leave the table.	Mom prompted the participant to sit, answer questions, and gave them the answer to imitate.
Participant 1	Asked to take 1 small bite of snack and eat it very slowly during the mindful eating exercise.	Ate multiple pieces of the food and kept eating more of the snack while the experimenter was reading the metaphor.	The experimenter prompted the participant to eat slowly and respond to prompts given.
Participant 2	Asked a question about lying and if they had ever lied.	Disregarded the application of the question and asked the experimenter about terrorism.	The experimenter expressed the seriousness of terrorism and redirected them back to the topic of lying, which was followed through with a response.
Participant 2	Asked to use a magnifying glass within an activity	Was playing with the tool and looking to	The experimenter redirected the



		close the computer to it.	participant back to the activity.
Participant 3	Asked to draw fear or worry on a piece of paper.	Said that it was “too scary”, “too hard”, and “not possible”	Asked to draw something that made them happy first, then the experimenter asked them to describe their fear and the experimenter drew the scary picture for them.
Participant 3	Started to read a story	Changed subject and began to talk about trains.	The experimenter redirected back to the story and that we could discuss trains after.
Participant 4	Asked a why question-based on comprehension and application of the story.	Said it was “too hard” and what if they got the questions wrong what will happen.	The experimenter said there is no right or wrong answer and provided further verbal prompts to get any equivalent response.
Participant 4	Asked a why question-based on comprehension and application of the story.	Said they did not know and what if they would get a reward after the questions.	The experimenter said there is no right or wrong answer and provided further prompts.

APPENDIX F  
SAMPLE RECRUITMENT EMAILS

Hello \_\_\_\_\_,

Melina Segneri is an RBT with us here at Chicago Pediatric Therapy and Wellness Center. You probably know her from Friday night Friends, and work with most of the boys within the social group.

She is currently working on her thesis project and believes \_\_\_\_\_ would be an excellent participant. The purpose of her study is to investigate the effects of how Acceptance and Commitment Therapy, or otherwise known as mindfulness exercises, can impact a child and possibly lead to more flexible thinking. The study will ask your child to participate 1x a week for a duration of 45 minutes to an hour across 6 weeks. These sessions can be done either in person, or they can be done via telehealth. This is based on what may be the best practice with each potential participant. This is something that is outside of your child's regularly scheduled therapy sessions.

Please let us know if you and your child can help Melina out in her quest for knowledge and helping her further grow in our field. We appreciate any help we can receive!

APPROVAL STATEMENT: This project has been reviewed and approved by the SIUC Institutional Review Board. Questions concerning your rights as a participant in this research may be addressed to the committee chairperson, Office of Research Compliance, SIUC, Carbondale, IL 62901- 4344. Phone (618)-453-4533. E-mail: [siuhsc@siu.edu](mailto:siuhsc@siu.edu)

Best wishes,

Cara Lucas, M.S., BCBA

Chicago Pediatric Therapy & Wellness Center

P: (708)257-3296

Below is a follow-up email sent by Melina Segneri. This email will occur once they respond to Cara Lucas that they are interested in participating in the study. The email below is far more detailed in what is going to happen within the intervention and its benefits.

Hello \_\_\_\_\_,

My name is Melina Segneri, a graduate student at Southern Illinois University. I will be conducting a research study to complete my thesis requirement in the master's program of Behavior Analysis and Therapy. The purpose of this study is to evaluate the effects of defusion, acceptance, and present moment activities on inflexible behaviors and psychological flexibility.

Each week, participants will attend a one-hour session to learn how to manage unworkable thoughts and feelings through the use of metaphors, experiential activities, and discussions. The study will be conducted for 6 weeks.

Our main goal is to protect your family during the pandemic, so you can choose to participate via zoom or in-person at the clinic. If you are willing to participate in person, we will follow social distancing and safety guidelines.

If you agree to participate in the study, please let me know your availability to set up a meeting to review the consent and assent forms. In addition, I will give you detailed information about the research project. Please reach out if you have any further questions, comments, or concerns.

If you wish to continue with the research, I have a few questions for you to answer before the intervention begins. What are three preferred edibles your child enjoys and what are their two favorite activities to do at home?

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Thank you!

Melina Segneri

[Melina.segneri@siu.edu](mailto:Melina.segneri@siu.edu)

P: (618) 610-3123

Dr. Darwin Koch

[d.koch@siu.edu](mailto:d.koch@siu.edu)

Phone: 618-453-8949

## APPENDIX G

### CONSENT AND ASSENT FORMS

**Southern Illinois University at Carbondale**

#### **CONSENT TO PARTICIPATE IN A RESEARCH STUDY**

**TITLE OF STUDY: Comparison of the effects of defusion, acceptance, and present moment activities on inflexible behavior and problem behaviors in youths with Autism Spectrum Disorder.**

#### **INVESTIGATOR:**

My name is Melina Segneri. I am a graduate student at Southern Illinois University-Carbondale, and I am asking for permission for your child to participate in my research study. Please read this consent agreement carefully before you decide to allow your child to participate in the study. Your child will also be asked to agree (assent) to participate in this project. My co-authors on this project are my advisor, Dr. Shane Koch, and his doctoral student, Sebastian Garcia-Zambrano.

#### **PURPOSE:**

The purpose of this study is to evaluate the effects of defusion and present moment activities on maladaptive behaviors and psychological flexibility in youths with autism, using an alternative treatment design. Each session will be focused on one type of activity and will include a description of a metaphor, an experiential activity, and a discussion about the activity. Due to the COVID-19 pandemic, you can choose to receive the intervention via Zoom or in-person.

#### **SUBJECTS:**

Your child has been asked to participate because they are within the selected age range of the case study and have been diagnosed with ASD. Your daughter/son can receive services via telehealth or direct one-on-one therapy based on your preference.

#### **PROCEDURES:**

If you choose to have your child participate in the study, it will take approximately 1 hour per week for the next 6 weeks. Initially, your child will have to fill out two questionnaires: CAMM and AFQ-Y8.

Then, your son will participate in two types of activities: defusion (how to deal with unworkable thoughts) and the present moment. Each session will start with a metaphor about the activity and experiential activity. At the end of each session, we will discuss the outcomes of the session.

Finally, in the last session, your child will have to fill out the same two questionnaires they did at the beginning of the study.

**Data Analysis:**

We will measure the frequency of inflexible behavior during the sessions and the psychological flexibility using the questionnaires. The following behavioral therapist at the clinic will observe the sessions to record the frequency of problem behaviors via a video recording to promote social distancing: Cristian Martinez. The reasoning to record the sessions is because this reduces the amount of contact the participants come to encounter during the intervention when in person. If you choose to have your child participate via telehealth, recording the sessions will be the least invasive way to make sure that the primary research is following the script, attending to all of the planned goals, and when your child shows an instance of problem behavior. Recording sessions reduces the possible effect on the participant if another person is present observing the session. They will only see one of your child's sessions within the entire time of the research. These recordings will be deleted upon completion of the intervention.

During the intervention, Melina will have access to their data sheets on which their maladaptive behavior is occurring within their sessions.

**FOLLOW UP:** There is no follow-up procedure for this study. Therefore, you will not be asked to come back at any time.

**CONFIDENTIALITY:**

You and your child's identity will be protected to the extent allowed by the law. You/your child will not be personally identified in any reports or publications that may result from this study. Your responses to the survey will be kept confidential. To maintain the confidentiality of your family, we will assign a number for your child instead of using their names.

All data will be kept on a password secure computer accessible only to the researchers. Physical data will be locked in a cabinet, and only the experimenters will have access to this consent form. **Once data has been analyzed and the results are written up for publication, all research materials will be stored in a secure file cabinet for a period of up to 3 years after which all materials will be destroyed securely.**

**RISKS:**

There are no known risks involved in the participation in this study.

In the event you believe your child has suffered any injury or report of an injury as a result of participating in the research program, please contact the Chairperson of the Human Subjects Committee, who will review the matter with you and your child. Please, contact them at (618) 453-4534.

Under Illinois law, an exception to confidentiality is incidents of child abuse or neglect. If in the course of my research, I develop reasonable cause to believe such an incident has

occurred, I am required to contact the Illinois Department of Children and Family Services (DCFS).

**BENEFITS:**

We will further understand the relationship between Acceptance and Commitment Therapy and its impact on maladaptive behavior.

**RIGHT TO REFUSE OR WITHDRAW:**

Refusal to participate or withdraw from the project is a viable option at any time throughout the intervention without penalty. Also, any question can be skipped if chose not to answer.

Participation, non-participation, or withdrawal will have no influence on your services here at Chicago Pediatric Therapy and Wellness Center, located at 1739 N Elston Ave, Chicago, IL 60642.

**LASTLY:**

Would you prefer to have your child partake in this research project over Zoom or in person at Chicago Pediatric Therapy Wellness Center? Your preference will be put into a great deal of consideration during the assignment.

**QUESTIONS:**

If you have questions about the study, please contact me:

**Melina Segneri, B.S., RBT**

[melina.segneri@siu.edu](mailto:melina.segneri@siu.edu)

(618) 610-3123



**Dr. Shane Koch**

dskoch@siu.edu

Phone: 618-453-8949

**Sebastian Garcia-Zambrano M.S., BCBA**

[Sebastian.garciazambrano@siu.edu](mailto:Sebastian.garciazambrano@siu.edu)

618-534-2270

MY SIGNATURE BELOW INDICATES THAT I HAVE DECIDED TO HAVE MY CHILD VOLUNTEER AND PARTICIPATE AS A RESEARCH SUBJECT AND THAT I HAVE READ, I UNDERSTAND, AND I HAVE RECEIVED A COPY OF THIS CONSENT FORM. I REALIZE THAT MY CHILD MAY WITHDRAW WITHOUT PREJUDICE AT ANY TIME.

\_\_\_\_\_

DATE

\_\_\_\_\_

NAME AND SIGNATURE OF PARTICIPANT

\_\_\_\_\_

DATE

\_\_\_\_\_

SIGNATURE OF INVESTIGATOR

**APPROVAL STATEMENT:** This project has been reviewed and approved by the SIUC Institutional Review Board. Questions concerning your rights as a participant in this research may be addressed to the committee chairperson, Office of Research Compliance, SIUC, Carbondale, IL 62901- 4344. Phone (618)-453-4533. E-mail: [siuhsc@siu.edu](mailto:siuhsc@siu.edu)

## **Research Assent Form**

### **What is a research study?**

Research studies help us learn new things. We can test new ideas. First, we ask a question. Then we try to find the answer.

This form talks about our research and the choice that you have to take part in it. We want you to ask us any questions that you have. You can ask questions any time.

### **Important things to know...**

- You get to decide if you want to take part.
- You can say ‘No’ or you can say ‘Yes’.
- No one will be upset if you say ‘No’.
- If you say ‘Yes’, you can always say ‘No’ later.
- You can say ‘No’ at any time.
- We would still take good care of you no matter what you decide.

### **Why are we doing this research?**

We are doing this research to find out more about the best ways to talk about our feelings and thoughts with others. We will check how to accept feelings, manage thoughts, and get in contact with the present moment.

### **What would happen if I joined this research?**

- You need to fill out two questionnaires about thoughts and feelings at the beginning and the end of the study.
- You will participate in one-hour sessions per week for the following 6 weeks.
- During each session, we will tell you a story and we will have an activity about the story. In the end, we will talk about your thoughts and feelings during the session.

### **COULD BAD THINGS HAPPEN IF I JOIN THIS RESEARCH?**

Some of the questions might make you uncomfortable or the questions might be hard to answer. We will try to make sure that no bad things happen.

I do not expect anything bad to happen to you, but some kids may get bored during times when we are talking or do not want to share their feelings. If you feel you need a break or become tired, just let me know and we can move on to something more interesting. These sessions do not last very long, and they will be filled with fun activities as well.

If you do not want to answer a question or you do not want to continue with the activity, please let me know.

You can say 'no' to what we ask you to do for the research at any time and we will stop.

### **COULD THE RESEARCH HELP ME?**

We think being in this research may help you because these activities can help you to tolerate changes in your schedule and manage difficult thoughts and feelings.

### **What else should I know about this research?**

If you don't want to be in the study, you don't have to be.

It is also OK to say yes and change your mind later. You can stop being in the research at any time. If you want to stop, please tell the research doctors.

You would not be paid to be in the study.

You can ask questions any time. You can talk to Melina. Ask us any questions you have. Take the time you need to make your choice.

**Is there anything else?**

The only people in this group will be me and you. If you decide to be in the study I will not tell anyone else how you respond or act as part of the study. However, I have one helper that will make sure that I am running this research correctly. Their name is Cristian. They will only see one of your sessions within the entire time of the research. They will not see everything we talk about and they will only focus on me that I am doing all of the right things!

If you want to be in the research after we talk, please write your name below. I will write my name too. This shows we talked about the research and that you want to be part of it.

***Name of Participant*** \_\_\_\_\_

(To be written by adolescent)

***Printed Name of Researcher***

\_\_\_\_\_

*Signature of Researcher*

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*Date*

*Time*

If you have questions about the study, you can ask me now or anytime during the study. You can also call me at 618-6103123 or e-mail me at [melina.segneri@siu.edu](mailto:melina.segneri@siu.edu). This is a student research project; therefore, you may contact Dr. Koch at [dskoch@siu.edu](mailto:dskoch@siu.edu).

**Melina Segneri, B.S., RBT**

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VITA  
Graduate School  
Southern Illinois University

Melina Segneri

melinasegneri@gmail.com

Northern Illinois University  
Bachelor of Science, Rehabilitation and Disability Services, May 2018

Special Honors and Awards:

Graduated Cum Laude

Thesis Paper Title:

COMPARISON OF THE EFFECTS OF DEFUSION AND CONTACT WITH  
PRESENT MOMENT ACTIVITIES ON INFLEXIBLE BEHAVIOR IN YOUTHS WITH  
AUTISM SPECTRUM DISORDER

Major Professor Dr. D. Shane Koch Ph.D.