Evaluating the Efficacy of Group Acceptance and Commitment Therapy with Adults with Various Mental Health Disorders

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Dedication

This thesis is dedicated to my fellow classmates and faculty of BPSYC Class of 2017 – for without their continued encouragement and support, this thesis would not have been possible. To my wonderful parents – thank you for your unconditional support and motivation through this entire process, and over the past four years of my undergrad. And for all of the years before that. Forever grateful.
Abstract
For individuals with mental illness, there are many day-to-day challenges that can dramatically affect their overall quality of life. Traditional and third-wave behavioural therapies are being used to address these challenges to support those struggling with mental health concerns. Acceptance and Commitment Therapy (ACT) is a third-wave therapy that seeks to alter an individual’s response to maladaptive thoughts or private events rather than the thoughts themselves. The purpose of the current study was to re-evaluate the effectiveness of group ACT with adults with various mental health disorders. Researchers hypothesised that group ACT would increase participants’ psychological flexibility and mindfulness, while subsequently decreasing experiential avoidance and mental health symptomology. Participants included four adults with a variety of primary and secondary mental health diagnoses. ACT sessions were 3 hours in length and took place once a week for 12 weeks. All six ACT processes were covered, and one-on-one sessions and review sessions were also included. Data were collected using three self-assessments, which were delivered pre- and post-treatment. Assessments included the Acceptance and Action Questionnaire-II (AAQ-II) to measure psychological flexibility/experiential avoidance, Depression Anxiety Stress Scale 21 (DASS-21) to measure mental health symptomology, and the Five-Facet Mindfulness Questionnaire (FFMQ) to measure mindfulness levels. The results of this study were nonsignificant based on statistical analysis. Therefore, its hypothesis cannot be confirmed. Individual participant results showed varying inconsistent findings that were not statistically analysed. Clinical improvements and descriptive statistics suggest participants decreased mental health symptomology from pre-test to post-test. Limitations of this study included its small sample size, participant attrition, and the sole use of self-report data. Future research may benefit from including larger sample sizes, additional measures to assess weekly client progress, and follow-up assessments to determine maintenance post-treatment.
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Chapter I - Introduction

For individuals struggling with mental illness, there are many challenges that can affect their overall quality of life. Those with mental illness often experience isolation, lack of motivation, low self-esteem, avoidant behaviours, and an inability to alter their thinking as a result of their diagnoses (Larmar, Wiatrowski, & Lewis-Driver, 2014). Living with mental illness can be forcibly debilitating, as it can often lead to a variety of other concerns that may affect an individual’s well-being. More specifically, those struggling with mental illness may often develop consistent, maladaptive thinking patterns as a result of their diagnoses, which may present a sense of hopelessness and an inability to move forward in life (Harris, 2008). As a result, a mental health therapy that is able to address these concerns, by promoting appropriate coping strategies to help improve day-to-day life, psychological flexibility, and the ability to be mindful in everyday life would be beneficial in improving the lives of those experiencing mental illness to any degree.

Acceptance and Commitment Therapy (ACT) is used to address a variety of mental health disorders to improve psychological flexibility, mindfulness, mental health symptomology, and overall quality of life (Larmar et al., 2014). ACT is philosophically based on functional contextualism, and is theoretically rooted in Relational Frame Theory (RFT); that is, the contextual behavioural science of human language and cognition (Hayes, Levin, Plumb-Vilardaga, Villatte & Pistorello, 2013). The primary goal of ACT is to increase psychological flexibility and facilitate behavioural change while decreasing experiential avoidance, which is typically established through six core processes: acceptance, cognitive defusion, being present, self as context, values, and committed action (Harris, 2009). Further, these processes are presented in the form of a psychological flexibility hexaflex to demonstrate the connection between and importance of all six processes (Harris, 2009; Appendix A).

Traditionally, Cognitive Behaviour Therapy (CBT) has been used to treat a range of mental health disorders by aiming to identify, challenge, and alter any maladaptive thought patterns that arise as a result of the disorder(s) (Hayes, 2008). However, more recently, third-wave acceptance-based therapies such as ACT have been found equally effective at decreasing these types of thought patterns and overall mental health symptomology as a result. More specifically, the premise of ACT seeks to accept these types of unhelpful thoughts, referred to as private events, at face value and in the present moment, rather than acting to modify the content or change the frequency of the events, as CBT would typically suggest (Clarke, Kingston, Wilson, Bolderston, & Remington, 2012). In other words, ACT seeks to alter an individual’s perception of and response to these private events, as opposed to altering the thought itself, in order to increase psychological flexibility and achieve a value-directed life (Broley, 2013). It is important to note that although ACT and CBT differ in each one’s approach, ACT is an extension of CBT and falls under the overarching umbrella of cognitive behavioural therapies (Twohig, 2009).

Through past and emerging research, ACT has been shown to be effective with a variety of mental health diagnoses, including psychosis, polysubstance abuse, depression, social phobia, and chronic pain (Hayes, Luoma, Bond, & Lillis, 2006). More recently, ACT has also been proven effective for individuals diagnosed with post-traumatic stress disorder (PTSD; Woidneck, Morrison, & Twohig, 2014), as well as other treatment-resistant disorders such as borderline personality disorder (BPD) and chronic depression (e.g., Clarke et al., 2012; Chakhssi, Janssen, Pol, Van Dreumel, & Westerhof, 2015). Furthermore, research has continuously found ACT to be a beneficial treatment for individuals with comorbid disorders, such as anxiety and
depression, PTSD and major depressive disorder (MDD), and alcohol use disorder (AUD) with affective disorder (Dalrymple, Morgan, Lipschitz, Martinez, Tepe, & Zimmerman, 2014; Twohig, 2009; Thekiso, Murphy, Milnes, Lambe, Curtin, & Farren, 2015).

**Purpose/Hypothesis**

ACT’s generic applicability and success with both difficult-to-treat diagnoses and long-lasting conditions would appear to contribute to its effectiveness demonstrated through research thus far (Clarke et al., 2012). Nevertheless, as an emerging third-wave therapy, additional research is required to further support ACT as a beneficial group therapy for a range of mental health disorders, specifically as it relates to treatment-resistant and comorbid disorders. Therefore, the objective of the current study is to evaluate the effectiveness of group ACT with adults with a variety of mental health diagnoses, including, but not limited to, treatment-resistant and comorbid disorders. It is hypothesised that following ACT, participants will experience an increase in psychological flexibility and mindfulness, thereby decreasing experiential avoidance and mental health symptomology.

**Overview**

This thesis provides a comprehensive overview of the most contemporary ACT literature and highlights the relationship between such literature and the current study. The literature review explores the relationship between ACT and CBT, as well as the effectiveness of ACT as a primary therapy for a variety of mental health diagnoses. The method portion of this thesis includes participant information, as well as detailed documentation of this study’s research design, measures, settings, and outlined therapy procedures. Results are clearly presented using tables and graphs and will be discussed and analysed using both visual and statistical analyses. A conclusion to the study is included, as well as a discussion of all strengths and limitations identified. Recommendations are made for further research, and this study’s influence in the field of behavioural psychology is addressed.
Chapter II – Literature Review

Acceptance and Commitment Therapy (ACT)

ACT is a third-wave, evidence-based, behaviour therapy that aims to help individuals create a meaningful, rich life consistent with their values while accepting all pain that life often brings (Harris, 2009). ACT helps individuals to clarify their values to guide behavioural change while teaching psychological skills such as mindfulness to help manage the unworkable thoughts and feelings that one may experience through the process (Harris, 2009). ACT is rooted in functional contextualism and Relational Frame Theory, meaning it focuses on the relationship between language and cognition, and seeks to increase psychological flexibility (Hayes, 2008). Psychological flexibility may be further defined as the ability to contact the present moment, with full awareness, and take value-guided action (Harris, 2009). From the ACT perspective, psychopathology is often perpetuated by experiential avoidance, which is the process of avoiding certain private experiences, even when doing so may cause psychological harm; from there, psychological inflexibility often ensues (Hayes, 2008). Therefore, ACT seeks to decrease experiential avoidance and increase psychological flexibility by working through the six core processes to facilitate behavioural change guided by values (Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

The six processes of ACT include acceptance, cognitive defusion, being present, self as context, values, and committed action (Hayes et al., 2006). Hayes et al. (2006) further explain the exploration and mastery of these processes as positive psychological skills. Acceptance is defined as the substitute to experiential avoidance and is further described as the aware embracing of unwanted psychological experiences without any attempts to modify the frequency of such events. This explanation highlights the use of acceptance strategies rather than control strategies in ACT (Harris, 2009).

Cognitive defusion seeks to modify the function of these private events, rather than changing the form of the event itself. Contexts are created to change the way an individual relates to a thought, thereby reducing its literal quality. As an example, this may take an individual from fusing to the thought "I am stupid" to naming their thought as "I am having the thought that I am stupid". Other defusion techniques may involve placing a thought or image on a television screen and manipulating that image (turning it upside down, making it black and white, etc.) or adding a musical soundtrack to that same image (Harris, 2009). Thus, believability or attachment to these thoughts is decreased (Hayes et al., 2006). Further, Harris (2009) explains that the purpose of defusion is not to eliminate unwanted thoughts, but rather decrease the influence those unwanted thoughts have over an individual's behaviour. Hayes et al. (2006) explain being present as having the ability to contact the present moment, non-judgmentally, during psychological events as they occur. If individuals can experience their events more presently, Hayes et al. (2006) state that they will be able to develop more flexible behaviours that are consistent with the values they possess. This can be achieved, in part, through mindfulness exercises. On the contrary, if an individual is unable to contact the present moment by being mindful, one may fuse to an unhelpful thought, thereby increasing the likelihood experiential avoidance will occur. For example, if an individual with social anxiety is invited to a party but does not want to go because of his unhelpful thought of "I am not likeable", he is demonstrating fusion and the inability to be mindful in the present moment. However, he has previously identified friendship as one of his values. Therefore, if the individual can contact the present moment using mindfulness and defuse from his thought, he will be more likely to
attend the party regardless of his unhelpful thought, and display behaviours consistent with his previously identified values.

Self as context allows individuals to be aware of experiences without attaching to or investing in those experiences. This process is further divided into two entities: the observing self and the thinking self (Harris, 2008). Harris (2008) further explains that the thinking self is responsible for producing thoughts and images, while the observing self is responsible for observing those thoughts and images. In essence, as the thinking self produces unhelpful thoughts, and may never truly disappear, it is the responsibility of the observing self to focus on the present moment and tune out the thinking self (Harris, 2008). To further the above example, once the individual makes it to the party, regardless of his unhelpful thought of “I am not likeable”, it is very likely his thinking self may continue to have that thought throughout the party. However, his observing self is able to accept and defuse from that thought and focus on the present moment; that is, continuing the conversation with the new person he met just a few moments ago.

Through ACT, individuals are encouraged and assisted in identifying who and what is important to them, also known as their values. Values are intended to guide behaviour and facilitate change towards living a value-directed life. As in the above example, regardless of the unhelpful thoughts the individual was experiencing, he went to the party anyway because he valued friendship. Had he not identified that he valued friendship, it is not as likely he would have attended the party. It is important to note that the term "values" is not synonymous with "goals"; values are not something that can be achieved, but is simply things that are identified as important and therefore guide goal setting and behaviour.

Finally, ACT encourages effective, repeated actions, regardless of failures or setbacks, that are guided by identified values (Harris, 2008). Only by exercising committed action can one truly achieve a value-directed life. The above processes are interrelated, and all work together to achieve psychological flexibility.

There is a variety of research that indicates ACT to be a suitable therapy for a range of mental health diagnoses, as it seeks to target the six processes mentioned above, rather than specific symptoms or traits of a diagnosis (Larmar, Wiatrowski, & Lewis-Driver 2014). However, as a third-wave behaviour therapy, further research is needed to validate the efficacy of such a treatment, particularly as it relates to increasing psychological flexibility with treatment resistant and comorbid disorders. Thus, literature involving ACT as a primary treatment to improve psychological flexibility for a variety of mental health diagnoses, including treatment resistant and comorbid disorders, and in a variety of settings and forms, will inform this thesis.

ACT Compared to CBT

For many years, traditional behaviour therapies such as Cognitive Behaviour Therapy (CBT) have been at the forefront as a primary treatment for a wide array of mental health disorders. However, more recently, scientific fields have become more progressive in their ability to expose unanalyzed areas of research within pre-existing theoretical approaches (Hayes, 2008). In other words, third-wave therapies are emerging from the overarching, more dominant approaches, much like ACT and CBT, respectively. Historically, systematic reviews have covered studies proving CBT to be effective with disorders such as depression, generalised anxiety disorder, post-traumatic stress disorder, bulimia nervosa, and much more (Nathan & Gorman, 2005). More specifically, Nathan and Gorman (2005) explain that the particular aspects of CBT that have the most profound effect are social skills and problem-solving training,
exposure, and relaxation techniques. More recently, studies are showing ACT to be effective with just as many, if not more, diagnoses, including psychosis, stress, addiction, pain, and even epilepsy (Nathan & Gorman, 2005). ACT and CBT are both considered behaviour therapies, but the major difference between ACT and CBT are the aspects of control and evaluation of thoughts. Essentially, CBT can be considered a control strategy, wherein it requires individuals to recognise, evaluate, challenge, and modify automatic thoughts to decrease them (Hayes, 2008). On the contrary, ACT teaches individuals to accept, defuse, and move past maladaptive thoughts towards their values (all the while bringing those unhelpful thoughts along), by relinquishing all control over those automatic thoughts and just letting them be (Clarke et al., 2012).

A randomised control trial by Losada et al., (2015) compared the outcomes of ACT and CBT on dementia family caregivers with prominent depressive symptoms. Participants were 135 caregivers who identified as primary caregivers and scored a minimum of 16 on the Center for Epidemiologic Studies Depression Scale (CES-D scale). Participants were randomly assigned to ACT (n=45), CBT (n=42), or the minimum support control group (CG; n=48). Measures included sociodemographic information, cognitive status, care recipient functional capacity, and frequency of behavioural problems. Primary outcome measures included the CES-D for depressive symptomology and the Tension-Anxiety subscale from the Profile of Mood States (POMS). Secondary outcomes included an adaptation of the Leisure Time Satisfaction Scale, the Experiential Avoidance in Care-giving Questionnaire, and the Dysfunctional Thoughts About Caregiving Questionnaire. All assessments were delivered pre- and post-treatment and at follow-up. Both ACT and CBT interventions included eight 90-minute individual sessions, delivered weekly. The CBT intervention comprised of cognitive restructuring, assertive skills, relaxation, and increasing pleasant activities. The ACT intervention focused on the acceptance of unpleasant events and related circumstances and choosing action related to and oriented towards values. Participants in the control group participated in a psychoeducation-based workshop on dementia, wherein no therapeutic techniques were applied. Results of the study showed both ACT and CBT to be effective overall in comparison to the CG. Both ACT and CBT resulted in clinically significant decreases in depressive symptomology, but only CBT participants maintained their effects at follow-up. Losada et al. suggested that this may be due to the perceived complexity of ACT, and participant effort required. Conversely, participants who received ACT showed significantly lower anxiety scores than those in CBT or CG conditions, post treatment. This is likely due to the emphasis placed on validating and normalising participant distress, apprehension, and worrying, which in turn may have decreased anxiety. Increases in behavioural activation and overall reductions in dysfunctional thoughts were found for both ACT and CBT, however, only ACT resulted in decreased experiential avoidance, which, according to Hayes, Wilson, Gifford, Follette, and Strosahal (1996), contributes to a variety of psychopathology and is main aim of ACT. Therefore, the results of this study indicate CBT and ACT to be effective at decreasing depressive and anxious symptomology; yet ACT was more successful in reducing dysfunctional thoughts, anxiety, and experiential avoidance. Limitations of this study included a non-representative sample of the overall caregiver population and the use of standardised interventions preventing individualised treatment options. The outcome of this study would suggest that although ACT and CBT yielded differing treatment effects, both are plausible treatments for depression and anxiety.

A study by Arch, Eifert, Davies, and Vilardaga (2012) yielded similar results to those of Losada et al. (2015). Arch et al. conducted a randomised control trial using 128 participants with
one or more DSM-IV anxiety disorders, to test the effects of ACT in comparison to CBT. Participants were randomly allocated to receive ACT (n=57) or CBT (n=71). Each treatment condition consisted of 12 weekly 1-hour sessions. Outcome measures included the Anxiety Disorders Interview Schedule-IV (ADIS-IV) and the Anxiety Sensitivity Scale (ASI), the Quality of Life Inventory (QOLI), and the Acceptance and Action Questionnaire (AAQ), with additional secondary outcome measures also included. Participants were assessed at pre- and post-treatment, and at 6 and 12-month follow-ups. CBT sessions followed a previously existing manual and included cognitive restructuring and exposure techniques, as well as relaxation techniques and relapse prevention. ACT sessions followed similar protocols to those mentioned in the studies above and covered topics such as acceptance, mindfulness, cognitive defusion, and values. Fundamentally, CBT sessions targeted symptom reduction, whereas ACT sessions emphasised psychological flexibility and experiential avoidance. Overall, post-treatment scores for ACT and CBT did not significantly differ. However, at follow-up, ACT resulted in a longer-lasting treatment effect in terms of disorder severity and psychological flexibility, but participants from the CBT groups reported a higher quality of life overall. Though both treatments were shown to be effective, and neither maintained any significant effect on the other, this study highlights ACT’s ability to decrease mental health symptomology and increase psychological flexibility long-term. Arch et al. identified high attrition rates and an inability to draw conclusions about single anxiety disorders as primary limitations of this study.

To advance the findings of Arch et al. (2012), Gonzalez-Menendez, Fernandez, Rodrigues, and Villagra (2014) aimed to test the long-term effectiveness of ACT in comparison to CBT. Participants included 37 currently drug-dependent female inmates from a state prison. Participants were randomised and allocated to ACT treatment (n=18) and CBT treatment (n=19). Measurement instruments included the Addiction Severity Index-6 (ASI-6), Anxiety Sensitivity Index (ASI), Acceptance and Action Questionnaire (AAQ-II), Mini International Neuropsychiatric Interview (MINI), Multidrug Urinalysis (UA), and a semi-structured interview to collect history of treatment and criminal involvement. All assessments were delivered prior to and immediately after treatment, and at 6, 12, and 18-month follow-ups. ACT and CBT protocols consisted of 16 weekly sessions, with each session lasting 90 minutes. ACT sessions followed typical protocol and cycled through all six processes, incorporating psychoeducation, discussion, exercises, and homework, much like the studies by Losada et al. (2015) and Arch et al. (2012). CBT sessions included psychoeducation and exercises involving thoughts, feelings, decision-making, assertiveness, and relapse prevention. Overall, long-term outcomes in regards to abstinence were significantly higher for ACT than for CBT, following all five assessment periods. ACT lead to significant therapy effects, according to the ASI-6 and AAQ-II, although CBT saw a greater improvement in ASI scores. Similarly, Arch et al. (2012) also discovered ACT resulted in reduced anxiety scores when compared to CBT. Gonzalez-Menendez et al. (2014) proposed that this difference in findings may be a result of changes in situations that produced lower anxiety levels. More specifically, inmates who were placed in the CBT condition and were released from prison at 12 and 18-month follow-up were likely naturally experiencing less anxiety following their incarceration. Levels of acceptance across all assessments increased solely in the ACT group, suggesting participants successfully demonstrate the first of the core six ACT processes (Gonzalez-Menendez et al., 2014). Furthermore, experiential avoidance decreased overall, which is typically said to improve overall well-being. To illustrate this, only 42.9% of ACT participants still met the DSM-IV criteria for the assessed disorders, compared to 77.8% during the initial assessment period. At 18-month follow-up, only
21.4% of participants presented with DMS-IV diagnoses. The results of this study, much like those of Losada et al. (2015) and Arch et al. (2012), would indicate that ACT is equally as effective as CBT in reducing mental health symptomology, particularly as it relates to substance use. In this study, ACT was favourable for producing longer-lasting results when compared to CBT and was determined a preferred treatment option for such a population. However, this study used a small sample size, which may affect the generalizability of the results obtained.

A comprehensive review of the ACT literature by Ruiz (2010) compiled data by correlational studies, experimental studies pertaining to psychopathology, outcome studies, and other forms of interventions involving ACT. Ruiz concluded that based on the reviewed studies, ACT appears to be a widely diverse therapy that can be effective with disorders in which experiential avoidance is present. Overall, ACT leads to large effect sizes that either maintained or improved at follow-up in the reviewed studies. Ruiz also stated that when comparing ACT to CBT, studies showed more positive results in favour of ACT; though typically, studies showed similar results in terms of their effectiveness for both ACT and CBT.

To recap, the reviewed studies highlight the effectiveness of ACT and CBT as equally beneficial treatments. The above literature indicates both ACT and CBT to be effective in their own rights; however, overall, research indicates areas in which ACT is more successful, including its efficacy and longevity.

ACT with Various Mental Health Disorders

As previously mentioned, ACT has been shown to be effective with a variety of mental health and physical diagnoses. Moreover, Ruiz (2010) found ACT to be most effective with disorders wherein experiential avoidance is present, which he would further explain to accompany the majority of psychological disorders, including anxiety and depression. The following studies will examine the impact of ACT on various treatment resistant disorders and comorbid disorders.

ACT with treatment-resistant disorders. Clarke, Kingston, Wilson, Bolderston, and Remington (2012) conducted a study to test the effects of ACT on 10 participants considered to be “treatment-resistant”. Participants included individuals with personality disorders, depression, substance use, and/or eating disorders. All participants were assessed pre-test, post-test, and at follow-up using a variety of assessment measures, including the GSI, the QuOL-BREF, the MAAS, the BDI-II, the AAQ-9, and the TBTF. Sessions were held once a week for 16 weeks, and typically lasted 2.5 hours each week. Participants were divided into two separate ACT groups (group 1=6 participants, group 2=4 participants); however, both groups received the exact same treatment. Clarke et al.’s sessions included homework discussion, psychoeducation of new ACT concepts, mindfulness exercises, and review of material. As a group, significant improvements were made from pre-test to second follow-up at 12 months; GSI, BDI-II, TBTF and AAQ-9 scores decreased, while QuOL-BREF and MAAS scores increased. More specifically, individual statistics demonstrated that of the five participants who originally met the criteria for a personality disorder, zero met the criteria at the 12-month follow-up. Overall, individual analyses demonstrated that half of the study’s participants experienced significantly decreased symptomology at both 6-month follow-up and 12-month follow-up. These outcomes suggest that ACT as a primary form of treatment for a variety of diagnoses may be effective in decreasing the frequency and severity of mental health symptomology individually, particularly as it relates to personality disorders. Additionally, this study demonstrates that ACT may result in decreases in mental health symptomology, even for those who have resisted various treatments
in the past, while maintaining results up to 1 year later. Limitations of this study included the possibility of dormant effects from previous interventions, though correlational analyses showed no significant relationship between these variables, and the sole reliance on self-report data, which may have affected the reliability of the study’s results.

While Clarke et al. (2012) examined the effects of ACT on various treatment resistant disorders, Heffner, Sperry, Eifert, and Detweiler (2002) intended to demonstrate the effectiveness of ACT as a primary treatment with anorexia nervosa (AN) specifically. While duration of sessions and length of therapy were not described by the authors, sessions included mindfulness exercises, meditation, psychoeducation of ACT principles, and related ACT exercises. The participant was assessed prior to and following treatment using the EDI-2, which is a self-report measure involving symptoms of anorexia nervosa and bulimia nervosa. Following treatment, Heffner et al. found scores in most categories on the EDI-2, including ineffectiveness and drive for thinness, decreased from the clinical range to the nonclinical range. Body dissatisfaction scores remained the same. In efforts to further explain this finding, Heffner et al. stated that the purpose of ACT in this study was not to eliminate thoughts of body dissatisfaction, but rather to learn to accept the thoughts and learn to move past them towards identified values, which was achieved. The participant’s weight increased from 51kg at baseline to 56.7kg at follow-up, and her menstrual cycle also returned following treatment, after a 3-month period in which her menstrual cycle was absent. Typically, eating disorders become challenging to treat with traditional therapies, as they often neglect to target to experiential avoidance related to eating disorders. However, the outcome of this study suggests that using ACT as a primary treatment may be beneficial for individuals with any form of eating disorder. Additionally, this study supports the findings of Clarke et al., (2012) which suggest ACT may be a beneficial treatment option for those considered to be treatment-resistant. While the findings of this study support the efficacy of ACT with various treatment-resistant disorders, it is not without its limitations. Furthermore, Heffner et al. identified this study's inability to support the efficacy of ACT alone, as the methodology incorporated additional treatment components such as CBT and parental support. Additionally, the participant involved in the study was deemed high functioning and in the early stages of her diagnosis; as a result, the efficacy of ACT for individuals with chronic AN, who may or may not be in patients, cannot be confirmed.

Differentiating from the above two studies, McCracken, Vowles, and Eccleston (2005) tested the effects of ACT on long-lasting chronic pain, including back, limb, and/or neck pain. The 108 participants included in the study were assessed using the Beck Depression Inventory (BDI), the Pain Anxiety Symptoms Scale (PASS), and Sickness Impact Profile (SIP), and the Chronic Pain Acceptance Questionnaire (CPAQ). Physical performance was also assessed. Assessments were administered at the initial assessment, start and end of treatment, and at 3-month follow-up. Participants were assigned to various programs, depending on the level of treatment required. All groups received the same content. Therapy was based on the ACT protocol developed by Hayes (1999), but also incorporated physical exercises and relaxation exercises, to attend to the physical aspect of the program. Results of the study indicated that following ACT, physical ability increased by 48.2%. Depression scores decreased by 41.2%, and pain-related anxiety, physical disability, psychosocial disability, and daytime rest scores all saw statistically significant reductions, as did the number of pain medications taken. Most improvements were maintained at follow-up, but all scores improved compared to pre-treatment scores. Furthermore, a reduction of 43.9% in GP visits was found from initial assessment compared to follow-up, and the need for health reductions in the workplace decreased as well.
Much like the treatment-resistant participants in the study by Clarke et al. (2012), the participants in this study had attempted numerous forms of therapy in the past. Therefore, the results of this study highlight the benefits of ACT as it relates to not only mental health diagnoses but physical diagnoses as well. It is important to note that this study did not use a randomised clinical trial, which may be taken into account when considering its findings as proof for the efficacy of ACT.

**ACT with comorbid disorders.** Dalrymple, Morgan, Lipschitz, Martinez, Tepe, and Zimmerman (2014) aimed to assess the effects of ACT on individual changes in mental health severity and symptomology. More specifically, Dalrymple et al. explored the impact of ACT on comorbid depression and anxiety. This study recruited 36 adult participants, ages 18 to 69, with a DSM-IV diagnosis of generalised social anxiety disorder and a depressive disorder who were accessing pharmacological support at psychiatric outpatient unit. Clinical interviews were completed prior to and following treatment, and quality of life, behavioural avoidance, and depressive symptoms were also measured at pre-test and post-test, as well as half way through the ACT sessions. Sixteen individual ACT sessions were conducted with each participant, all using the same protocol, and included psychoeducation and exercises related to the six core processes of ACT (acceptance, defusion, present moment, self-as-context, values, and committed action). Sessions also included occasional exposure therapy and behavioural activation exercises, as needed, though ACT remained the primary therapy used. Dalrymple et al. discovered significant decreases in comorbid social anxiety and depression across all participants, with moderate effect sizes. Significant changes in functioning and quality of life were also reported following the final clinical interview. Therefore, the outcomes of this study demonstrate ACT to be effective for decreasing comorbid symptomology in adults with both depression and/or anxiety, or possibly many other forms of comorbidity. While its findings appear beneficial in support of ACT, it should be noted that this study used a small sample size and was an open trial. As such, results may only be considered preliminary and the degree to which results may be considered a direct effect of ACT may be questioned.

Similar to the findings of Dalrymple et al. (2014) were those of Batten and Hayes (2005), who examined comorbid substance use and post-traumatic stress disorder (PTSD) following ACT with a single participant. The selected participant was reportedly seeking help for substance use and met the criteria for PTSD stemming from childhood sexual abuse (CSA). Assessment measures included the Acceptance and Action Questionnaire (AAQ), the White Bear Suppression Inventory (WBSI), the Automatic Thought Questionnaire (ATQ), the Symptom Checklist-90-R (SCL-90-R), the BDI, and the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), all of which were delivered prior to and following treatment, and at follow-up. Sessions were held bi-weekly for the first several months of treatment, and reduced to once a week for the remainder of the year. All sessions followed an extended version of the ACT protocol developed by Hayes (1999), to allow for deeper exploration of severe trauma-related effects. Overall, assessment scores improved following treatment; more specifically, all scores obtained from the self-report measures were no longer clinically significant. Abstinence from substances began during the 7th month and was maintained throughout, and scores from the MMPI-2 showed clinically significant decreases in psychopathology. At 18-month follow-up, all improvements in scores were maintained, and abstinence remained. It would appear that much like the outcomes of Dalrymple et al.’s study (2014), ACT may be considered an effective therapy for a variety of co-morbid disorders, some of which may often be considered treatment-resistant.
Individual ACT vs. Group ACT

Following an in-depth review of the above studies, as they relate to other forms of treatment and their applicability to various diagnoses, it should be noted that ACT can be implemented successfully in individual or group format, depending on the needs of the individual(s) it is servicing. Many of the studies reviewed delivered ACT individually, including Batten and Hayes (2005), McCracken et al. (2005), Heffner et al., (2002), Losada et al., (2015), and Dalrymple et al., (2014). Clarke et al. (2012), Arch et al. (2012), and Gonzalez-Menendez et al. (2014) all conducted studies in which group ACT was found to be effective. Additionally, all studies that implemented group ACT analysed both group and individual assessment scores, in order to assess the effects of the therapy at two different levels. Generally, group therapy has been shown to be more cost-effective and equally as beneficial as individual therapy, with the added advantage of peer support and reduced self-stigma. However, in terms of overall improvements in psychological flexibility, no comparison studies have been released. Therefore, individual and group ACT may both be successful in treating a variety of mental health disorders (Clarke et al., 2012).

ACT and Psychological Flexibility

Although a third-wave therapy, ACT appears to be an effective form of treatment in more ways than one. However, through research, it is important to consider the factors mentioned above to truly determine the efficacy of ACT as a whole. More specifically, population, format, and setting must all be reviewed to best illustrate ACT’s ability to improve psychological flexibility, and subsequently decrease mental health symptomology and experiential avoidance, which remains the primary goal of ACT. A pilot study by Rouleau (2014) tested the effects of group ACT on psychological flexibility in adults with various mental health disorders, all of whom were clients of the agency’s vocational rehabilitation program. Disorders present in the group included, but were not limited to, comorbid major depressive disorder and borderline personality disorder, attention deficit hyperactivity disorder (ADHD), social anxiety, PTSD, eating disorder not otherwise specified (NOS), and unipolar depression. Sessions took place at a community mental health and addictions agency and consisted of 8 weekly 3-hour sessions. Participants were assessed using the Acceptance and Action Questionnaire-II (AAQ-II), the Depression Anxiety Stress Scale (DASS-21), and the Five-Facet Mindfulness Questionnaire (FFMQ). Sessions followed a protocol adapted from that of Boon and Myler (2012) and included topics such as control, mindfulness, acceptance, committed action, defusion, self-as-context, values, and psychological flexibility. Following treatment, group DASS-21 scores showed a statistically significant reduction in depression, anxiety, and stress from pre-test to post-test. In contrast, FFMQ scores showed substantial increases following treatment. Overall, group scores indicated statistically significant reductions in experiential avoidance, as measured by the AAQ-II, which likely increased psychological flexibility. These scores were maintained at follow-up; thus, this finding speaks to the long-term effects of ACT in regards to psychological flexibility, as it posits participants were able to continue practising ACT following group. Assessment results would indicate that mental health symptomology likely decreased due to improved psychological flexibility, as originally suggested by Fledderus, Bohlmeijer, Fox, Schreurs, and Spinhoven (2013). This finding further highlights the primary aim of ACT as not to see a reduction in diagnostic severity, but rather an increase in psychological flexibility, with a secondary goal of decreased symptomology. Fledderus et al. (2013) also stated that increasing psychological flexibility can contribute to a long-lasting reduction in psychological distress,
which was seen in the 3-month follow-up scores of 4 participants collected at follow-up in Rouleau’s study (2014). The length of this study was not empirically supported by previous research, and the researchers relied solely on self-report data, both of which are limitations that must be noted, as both factors may contribute to the significance of the findings presented.

**Summary of the Literature**

There is extensive research on the efficacy of ACT compared to CBT, most of which indicates that while ACT is more effective at creating longer-lasting results, both are beneficial therapies in their own rights. What appears to be the main difference is the way in which each therapy manages thoughts; however, it is clear that ACT is simply an extension of CBT, as both are rooted in behavioural framework. Literature involving ACT and treatment resistant and comorbid disorders is diverse. More specifically, there is an abundance of research related to the effects of ACT on depression and anxiety; nearly every study reviewed assessed for depression and anxiety levels pre-test and post-test, regardless of which dependent variables were being primarily assessed, and discovered decreases in most. There is less evidence available supporting the form in which ACT is implemented, as current research would suggest that ACT delivered in group or individually is equally as preferable. Research indicates that ACT as a primary form of treatment can often result in improved mental health symptomology, although this is typically not the primary goal of ACT research. Moreover, the primary goal of the reviewed studies is to decrease experiential avoidance by accepting thoughts, thereby increasing psychological flexibility. Overall, literature would indicate ACT is an applicable, beneficial, and efficient third-wave therapy that can assist individuals with varying degrees of mental health diagnoses.

**Relationship Between Literature Review and Current Thesis**

The reviewed literature has demonstrated that through ACT, individuals typically experience a decrease in experiential avoidance; as a result, an increase in psychological flexibility often occurs, as does a decrease in overall mental health symptomology. It is clear that ACT may be a beneficial treatment for individuals with varying needs, as its generic applicability and focus on processes rather than diagnoses has yielded statistically significant results. Studies have shown that by cycling through all six processes of ACT, using psychoeducation, discussion, and exercises, an increase in psychological flexibility is more likely. While no clear gaps in the literature exist, it is important to continue adding to the ACT research to strengthen its reputation as a beneficial form of therapy, effective with a variety of populations. Therefore, the aim of the current study is to evaluate the efficacy of group ACT with adults with various mental health disorders. Based on the reviewed literature, it is fair to hypothesise that following the application of a group ACT intervention, participants will experience an increase in psychological flexibility and mindfulness, thereby resulting in decreased experiential avoidance and mental health symptomology.
Chapter III – Methodology

Participants

Recruitment. Prior to the study beginning, approval was granted by the Research Ethics Board of St. Lawrence College (Appendix B). Fourteen individuals were referred by their primary workers at an Addiction and Mental Health Service in a local community organisation in Eastern Ontario. Referral forms were filled out by agency workers, on behalf of each potential participant. Referrals were based on a need for therapy and clinical judgement of the participant's primary worker. Internal referrals were sent to the co-facilitators and all clients were contacted to attend an ACT pre-screening involving the client, their worker, and one of the group's co-facilitators. An unstructured interview to determine eligibility, current symptomology and readiness to change were conducted by either co-facilitator, to determine whether or not each client met the predetermined inclusion criteria. After all pre-screenings were complete, the facilitators contacted those who met the inclusion criteria and were deemed a good fit for ACT. Those clients were formally invited to join the ACT group. Of the 14 participants referred, 10 met the study’s inclusion criteria and agreed to participate in the group. Due to lack of attendance, three out of the 10 selected participants were asked to leave and reapply for the group when they were able to commit. Two more stopped attending, for unidentified reasons, and another two refused to sign consent. Overall, a total of four participants, one male and three females, took part in the study.

Inclusion/exclusion criteria. Participants selected for this study were required to have a mental health diagnosis, be current clients of the agency, be over the age of 16 (the agency’s age of consent), be able to read and write, have maintained a good attendance record in the past, and have agreed to participate in the group voluntarily. As part of the study’s inclusion criteria, participants were required to verbally agree to miss no more than two sessions over the course of the study; failure to do so would result in participants being asked to leave the group. However, cofacilitators were lenient, and clients were still eligible to receive all other services from the agency should they be asked to leave. Participants could not be in active psychosis or actively suicidal, and could not have a learning disability that would prevent them from understanding the material. Current symptomology and readiness for change were also assessed through an unstructured interview with the project's co-facilitators and contributed to an individual's suitability for ACT.

Participant characteristics.

Participant 1. Participant 1 was a 40-year-old male diagnosed with an anxiety disorder. His formal documentation does not provide a primary/specific diagnosis. He had concerns with substance use and anger issues in the past and had a relevant legal history as well. He had attempted to complete ACT in the past but was unsuccessful. He has also completed some high school.

Participant 2. Participant 3 was a 69-year-old female diagnosed with Borderline Personality Disorder (BPD). She had completed CBT programs in the past but did not attend other groups while partaking in ACT. She has also completed some college.

Participant 3. Participant 5 was a 30-year-old female diagnosed with an anxiety disorder. Formal documentation does not provide specifics regarding the form of anxiety. She had received CBT therapy in past but was not partaking in any other therapy during the time of ACT. She has also completed some college.

Participant 4. Participant 6 was a 39-year-old female with a primary diagnosis of anxiety, not otherwise specified (NOS). She had not participated in any other therapies in the
past and did not attend any other treatments during the time of the study. She has completed her college education.

Informed consent. Informed consent (Appendix C) was obtained from all participants prior to the first group session beginning. The researcher provided each participant with a copy of the informed consent document and read it aloud while each participant followed along. Participants were asked to review the document independently and encouraged to ask any questions or voice any concerns they had. Participants were then asked to sign and date the document and were provided with a copy of their signed consent for their own records. The consent form document contained contact information for the agency supervisor, the faculty supervisor, and the Research Ethics Board. The form also mentioned possible risks and benefits of participating, participant rights, confidentiality, plans for data use, and the storage of data collected. Those willing to offer consent were asked to sign and date their form. Copies of each signed consent were made; one copy was provided to the client who signed it, for his or her own records, and the original was kept by the researcher and transferred into the agency’s client database. Those who chose not to provide consent for their data to be used in this study were still able to receive therapy as usual.

Design

This study used a group, pre-test/post-test, non-experimental design. Pre-test assessment scores were compared to post-test assessment scores. Data were compared and analysed statistically using SPSS. Descriptive statistics for the group and individual scores were included, and visual analyses of the group and individual results were also completed. All data were presented in table format and using bar graphs. Session notes were completed by the facilitators and inputted into the agency’s client database, as per agency policy. These notes included the purpose for documentation, a detailed description of each session, and the facilitator’s clinical assessment of each participant and group overall.

Independent variable. The independent variable of this study was the ACT group therapy. Treatment was based on a group protocol by Rouleau and Jobin (2014), with modifications as needed. Rouleau and Jobin’s (2014) manual was modified from the original ACT Group Therapy protocol developed by Boone and Myler (2012). Permission for use of this manual within the agency was obtained by Rouleau during Rouleau and Jobin’s pilot study (July 2014). Modifications were necessary to tailor the therapy to the immediate needs of the group overall. For example, some experiential exercises and psychoeducation PowerPoints were postponed to be delivered in later sessions, as the in-depth discussion of participant questions took up the majority of certain sessions. If the discussion was relevant and helpful to the learning of the group overall, the group’s facilitators did not rush through in order to complete the plan for that particular session. Additional changes were made to Boone and Myler’s original PowerPoint presentations and experiential exercises, and the order in which each process was presented was also altered. Certain experiential exercises were omitted if the facilitators did not feel the group would easily relate to or understand the exercises. In addition, the project’s facilitators added two additional review sessions at the end, to ensure participants could communicate a solid understanding of all material learned. Two one-to-one sessions with facilitators were included to complete an in-depth check-in with each participant and review each participant’s progress and understanding of the group thus far. Therefore, this study implemented a total of 12 ACT sessions, compared to the 8 implemented in the original pilot study by Rouleau and Jobin (2014), and the 10 suggested by Boone and Myler (2012).
Dependent variables. The dependent variables of this study were the scores retrieved from assessment measures used at pre-test and post-test. Each client's level of depression, anxiety, and stress were measured, as well as their levels of mindfulness and experiential avoidance. All scores obtained post-test were compared to pre-test scores to determine treatment effect; more specifically, post-test scores are indicative of whether or not the manipulation of the independent variable made a significant difference when compared to pre-test scores. All follow-up scores obtained are indicative of any maintenance of treatment effects from post-test to follow-up assessment. For the current study, the researcher analysed changes in the dependent variables using descriptive and statistical analyses.

Measures.

Depression Anxiety Stress Scale-21. Lovibond and Lovibond's (1995) Depression Anxiety Stress Scale (DASS-21; Appendix D) is a 42-item self-report questionnaire designed to assess an individual’s emotional state in terms of his or her level of depression, anxiety, and stress over the past week. The DASS-21 uses a 4-point Likert-scale ranging from “0-did not apply to me at all”, to “3-applied to me very much, or most of the time”. The depression, anxiety, and stress subscale scores range from 0-42 points. A score of 28 and above on the depression subscale, 20 and above on the anxiety subscale, and 34 and above on the stress subscale is considered “extremely severe” in each area. According to the Psychology Foundation of Australia (2014), this measure maintains high internal consistency and can be applied in a variety of settings. Furthermore, Lovibond and Lovibond (1995) state that as the DASS-21 is dimensional rather than categorical, it may only be used to assess changes in symptomology, and not as a diagnostic tool.

Five Facet Mindfulness Questionnaire. The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al, 2008; Appendix E) is a 39-item self-report questionnaire that specifically measures each individual’s level of mindfulness. The assessment uses a 5-point Likert scale and ranges from “0 - never or vary rarely true” to “5 - very often or always true”. The FFMQ contains five subscales including non-reactivity to inner experience, observing/noticing, acting with awareness, describing, and non-judging of experience. It is suggested that the higher the score in each subscale, the more positive the results are. Results of a study by Baer et al. (2008) would indicate that the FFMQ maintains good construct validity and high internal consistency.

Acceptance and Action Questionnaire-II. The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011; Appendix F) is a 7-item self-report questionnaire designed to measure acceptance, experiential avoidance, and psychological inflexibility. The assessment uses a 7-point Likert-scale ranging from “0-never true” to “7-always true”. Scores from each item are tallied to obtain an overall score; the higher the score, the higher the level of psychological inflexibility or experiential avoidance. A study by Bond et al. (2011) indicated that the AAQ-II has high content validity and internal consistency, as well as good test-retest reliability. Overall, the AAQ-II possesses better psychometric properties than the AAQ-I.

Setting and Apparatus

All ACT therapy sessions were held in a designated group room at an Addiction and Mental Health Service agency. No apparatus was needed. The agency in which the study took place provided all necessary materials. A flip chart and white board with markers were used to document important points during sessions. A duo tang for handouts was given to each participant at the beginning of the first session, and handouts outlining exercises, activities, session material, and homework were provided with every session. Paper copies of the
PowerPoint presentations were provided so participants could follow along easier during sessions. A laptop, a projector, a copy of Rouleau and Jobin’s (2014) Group ACT Manual, copies of informed consent, mindfulness exercises, and additional copies of all exercises and homework sheets found in the Group ACT Manual (Rouleau & Jobin, 2014) were also required.

**Procedure**

Prior to the first session, participants were contacted to ensure their attendance. During this first session, pre-test assessments were given to each participant. Participants independently filled out each assessment and assistance were offered as needed. Participants were directed to select the answer that best suited them presently. The facilitators checked over each participant's assessments to ensure they were completed and collected them to be stored and filed. During this time, group guidelines were explained to participants as laid out by the co-facilitators. It was explained that unless due to extenuating circumstances or prior discussion with a facilitator, participants were required to attend all sessions. Participants were informed that should anyone miss more than two sessions, they would be asked to leave the group and re-attend at a later round of ACT. If this were to occur, participants would still able to access other services at the agency. The facilitators explained that if a participant missed a session, they were expected to attend a one-on-one make-up session with a facilitator. Guidelines for homework were communicated; that is, homework was assigned each week and participants were strongly encouraged to complete the homework, though it was not mandatory. Participants were further explained that completing their homework was for their benefit, as many of the concepts and activities in ACT require practice to produce effects.

**Session one.** This session introduced the topic of control (“control is the problem”) and contact with the present moment. The group started with the co-facilitators introducing themselves, and the participants pairing up to do the same. Group commonalities were discussed, as well as symptomology. Mindfulness was explained and a group mindfulness exercise was delivered. The group then worked together to identify group guidelines and considerations they would like to see included moving forward; these guidelines were paraphrased and finalised by the co-facilitators. An ice-breaker exercise was introduced for the participants to become comfortable with one another and facilitate discussion between group members. Psychoeducation about acceptance, control and contacting the present moment was delivered through an oral PowerPoint presentation explained by the co-facilitators. An experiential exercise was also completed during this time. Following the PowerPoint presentation, another mindfulness exercise was conducted and homework was assigned. Homework included a reading and daily mindfulness practice.

**Session two.** The session began with a mindfulness exercise and homework take-up. Values were the focus of this session and were introduced through the completion of a group matrix. Following the group matrix, another mindfulness exercise was completed, and homework was assigned. Homework included a reading about values and daily mindfulness. Individual sessions were booked for the following week, to complete an individual matrix with either of the co-facilitators.

**Session three.** This session was not a group session, but instead a one-to-one session with either facilitator to complete an individual matrix, which is the primary ACT exercise typically completed at the beginning of therapy. These sessions lasted one hour in duration, and following completion, a copy of the matrix was made and the original was given back to each participant.
Session four. The focus of this session was values, continued from session 2. The session began with a mindfulness exercise and homework take-up. The matrix exercise was discussed and co-facilitators asked participants to reflect and share their experiences with the exercises. Psychoeducation about values was presented using a PowerPoint and oral presentation. An experiential exercise (“Pretend you're 80…”) was used to highlight the importance of values, and the Bull’s Eye activity was explained. The session concluded with mindfulness and homework assignments, including completing a “bold move” in line with the direction of their values, the assigned reading, and daily mindfulness.

Session five. Values, goals, and committed action were the focus of this session. The session began with mindfulness and homework take-up, including the discussion of the bold move activity. The values and goals exercise was presented and explained, and together with co-facilitators, participants selected a primary goal to work on for the remainder of the group sessions, that was in line with one or more of their values. The concept of “SMART” goals was explained to assist participants in narrowing down their goals. Another mindfulness activity was conducted, following which homework was assigned. Homework included the weekly reading and daily mindfulness.

Session six. Committed action and defusion were the focus of this session. Mindfulness and homework take-up began the session, and a review of last week’s value-directed goals followed. In addition, participants were asked to develop a sub-goal to help them achieve their goal, with support from the group’s facilitators. Participants were reminded to “start small” and set themselves up for success, rather than develop a subgoal too large to achieve in a timely fashion. Following the discussion of subgoals, the co-facilitators conducted an in-depth review of the processes discussed thus far, encouraging participants to share what they knew about each process they had learned about in the first five sessions. The topic of cognitive defusion was introduced but was not discussed in-depth. A mindfulness session and assignment of homework concluded the session. Homework included a weekly reading, daily mindfulness, and attempting to complete the first subgoal developed during the session.

Session seven. Defusion was the primary process discussed during this session. The session began with mindfulness and homework take-up, which involved a discussion of barriers and strengths to completing previously defined subgoals. Historically, defusion is divided into two sessions; however, due to time constraints, defusion was discussed completely in this session. Psychoeducation using a PowerPoint and an oral presentation was delivered, and experiential exercises were used to illustrate the process. Some exercises involved props (i.e. the green glasses metaphor) and movement around the classroom, as well as in-depth discussions to better explain the process of defusing from thoughts and feelings without challenging or avoiding. The session ended with a mindfulness exercise and homework was assigned. The “getting hooked” exercise was assigned as homework, to help participants identify what thoughts are they are fusing to throughout their daily life and how doing so might affect them. A weekly reading and daily mindfulness were also included as homework.

Session eight. Self-as-context was the primary process introduced in this session. The session started with a mindfulness exercise and homework take-up. A review of the psychological flexibility hexaflex and the processes already reviewed was conducted, and participants were once again instructed to share what they could remember about each process. Psychoeducation about self-as-context and the observing self was presented through an oral presentation and a PowerPoint slideshow, with experiential exercises included, to illustrate the difference between the observing self and the thinking self. Many metaphors were used to
highlight the difference between the opposite perspectives. The session concluded with a mindfulness activity and the assignment of homework. For homework, participants were asked to complete their weekly reading, daily mindfulness, and the next sub-step of their value-directed goal.

**Session nine.** Similar to session eight, the focus of this session was self-as-context and an in-depth review of all processes thus far. The homework assigned in session eight was discussed following a mindfulness exercise. Self-as-context was discussed further, and more experiential exercises were introduced. As in session eight, a review of all processes was conducted by participants and monitored by the co-facilitators. A mindfulness exercise that incorporated values from the perspective of the observing self was introduced, with a discussion of the exercise to follow. Participants were asked to share their thoughts on the exercise, and following this discussion, homework as assigned. The homework included a weekly reading, daily mindfulness, and studying for the more in-depth review planned for session 10.

**Session 10.** This session consisted of an in-depth review of the first three processes discussed: acceptance, defusion, and present-moment. The processes were visually represented using the psychological flexibility hexaflex, and participants were asked to write down everything they could remember about each of the three processes on the whiteboard, including definitions, exercises, day-today-application, etc. Participants were also encouraged to make connections between any and all of the six processes. The information was reviewed and facilitators added any additional information they felt was pertinent. The session began and ended with a mindfulness exercise.

**Session 11.** Session 11 followed the identical breakdown of session 10, but instead reviewed self-as-context, values, and committed action. Participants were encouraged to share ways in which ACT has helped them move forward thus far, and seek advice from co-participants as needed.

**Session 12.** This one-on-one session included each participant and both co-facilitators, in which participants reflected on their experiences throughout the group. Facilitators sought feedback about the group from each participant and provided opportunities for participants to ask any remaining questions about any material presented or how to proceed with ACT moving forward. Following this discussion, post-assessments were delivered and completed by each participant. The post-assessments followed the same process as the pre-assessment session.

See Table 1 for a breakdown of the ACT processes discussed and the ACT experiential exercises presented in sessions 1 through 11.
Table 1
ACT Processes Discussed in Sessions

<table>
<thead>
<tr>
<th>Session</th>
<th>Primary ACT Process Discussed</th>
<th>ACT Exercises Presented</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Acceptance and Present Moment</td>
<td>Mindfulness</td>
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<tr>
<td></td>
<td></td>
<td>Tug-of-War Metaphor</td>
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<tr>
<td></td>
<td></td>
<td>Eating Grapes</td>
</tr>
<tr>
<td>2</td>
<td>Values</td>
<td>Mindfulness</td>
</tr>
<tr>
<td>3</td>
<td>N/A – One-on-One Session</td>
<td>Mindfulness</td>
</tr>
<tr>
<td>4</td>
<td>Values</td>
<td>Mindfulness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Pretend you’re 80…”</td>
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<tr>
<td></td>
<td></td>
<td>Bull’s Eye</td>
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<td></td>
<td></td>
<td>Bold Move</td>
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<tr>
<td>5</td>
<td>Values and Committed Action</td>
<td>Mindfulness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values and Goals</td>
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<tr>
<td>6</td>
<td>Committed Action and Defusion</td>
<td>Mindfulness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values and Goals</td>
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<tr>
<td>7</td>
<td>Defusion</td>
<td>Mindfulness</td>
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<tr>
<td></td>
<td></td>
<td>Getting Hooked</td>
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<td></td>
<td></td>
<td>Paper-in Face</td>
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<td></td>
<td></td>
<td>“Milk, milk, milk”</td>
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<tr>
<td>8</td>
<td>Self-As-Context</td>
<td>Mindfulness</td>
</tr>
<tr>
<td>9</td>
<td>Self-As-Context</td>
<td>Mindfulness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brief Observing Self with Values</td>
</tr>
<tr>
<td>10</td>
<td>Psychological Flexibility I</td>
<td>Mindfulness</td>
</tr>
<tr>
<td>11</td>
<td>Psychological Flexibility II</td>
<td>Mindfulness</td>
</tr>
<tr>
<td>12</td>
<td>N/A – One-on-One Session</td>
<td>Mindfulness</td>
</tr>
</tbody>
</table>
Facilitator manual. A facilitator manual developed by Rouleau and Jobin (2014) was provided for facilitators to use as a guide for each session. The manual contained session outlines, PowerPoint slides, lists of readings, lists of worksheets/exercises/activities, and descriptions of how to present all concepts, exercises, and metaphors. See Table 2 for a breakdown of the facilitator manual.
Table 2

Breakdown of the Facilitator Manual for Group ACT

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Letter to future facilitators</td>
</tr>
<tr>
<td>2</td>
<td>Introduction</td>
</tr>
<tr>
<td>3</td>
<td>Materials needed for implementation</td>
</tr>
<tr>
<td>4</td>
<td>Outlines for sessions 1 to 8</td>
</tr>
<tr>
<td>5</td>
<td>References</td>
</tr>
</tbody>
</table>
Chapter IV – Results

The purpose of this study was to evaluate the efficacy of group ACT with adults with a variety of mental health disorders. Furthermore, the hypothesis of this study was that following the delivery of group ACT, participants would experience an increase in psychological flexibility and mindfulness, as well as a decrease in experiential avoidance and overall mental health symptomology. The Acceptance and Action Questionnaire-II (AAQ-II), the Five-Facet Mindfulness Questionnaire (FFMQ) and the Depression Anxiety Stress Scale-21 (DASS-21) were used to measure treatment effects in these core areas. Below are the results of the study.

Statistical Analysis for the Group

A paired two-sample t-test for means was used to statistically analyse the results of this study. The t-test was conducted using a significance level of .05 for all three assessment measures.

AAQ-II. The results of the AAQ-II revealed no statistically significant effect from pre-test to post-test ($p=0.94$; see Table 3 for complete results of the statistical analysis). This finding indicates no statistically significant change in psychological flexibility/experiential avoidance levels following treatment.

DASS-21. The results of the DASS-21 indicated no statistically significant effect from pre-test to post-test ($p=0.37$; see Table 4 for complete results of the statistical analysis). Therefore, no significant change in mental health symptomology occurred following treatment.

FFMQ. The results of the AAQ-II showed no statistically significant effect from pre-test to post-test ($p=0.85$; see Table 5 for complete results of the statistical analysis). This finding suggests no significant increase in mindfulness occurred following treatment.

Table 3

<table>
<thead>
<tr>
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<th>Pre-Test</th>
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<tr>
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<td>t Critical two-tail</td>
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Table 4
Results of the Statistical Analysis of the DASS-21 Scores Pre-Test and Post-Test

<table>
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<td>P(T&lt;=t) two-tail</td>
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<tr>
<td>t Critical two-tail</td>
<td>3.182446</td>
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Table 5
Results of the Statistical Analysis of the FFMQ Scores Pre-test and Post-test

<table>
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<td>3.182446</td>
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Descriptive Statistics for the Group

AAQ-II. This study intended to see a decrease in AAQ-II scores from pre-test to post-test, which would indicate an overall decrease in experiential avoidance/increase in psychological flexibility. Results of the AAQ-II indicated an increase in the mean AAQ-II score of .25 occurred from pre-test and post-test (see Table 6; see Figure 1 for a graph of mean scores). The standard deviation increased by .29 from pre- to post-assessment. These results suggest an overall increase in experiential avoidance following treatment.

DASS-21. DASS-21 scores were intended to decrease following treatment, indicating an overall decrease in mental health symptomology. A decrease in the mean DASS-21 depression score of 1.50 occurred between pre- and post-assessments and the standard deviation revealed a decrease of 4.49 from pre-test to post-test. Depression scores fell into the moderate range pre-test and dropped to the mild range post-test. Results of the DASS-21 anxiety scores indicate an overall decrease of 4.75 from pre- and post-assessments, while the standard deviation decreased by 3.29 following treatment. Anxiety scores decreased from extremely severe to severe following treatment. The mean score of the stress subscale of the DASS-21 revealed a decrease of 5.25 from pre-test to post-test, and the standard deviation decreased by 6.78. Overall, stress scores decreased from the severe range to the moderate range (see Table 6; see Figure 1 for a graph of mean scores). These findings indicate an overall decrease in mental health symptomology following treatment.

FFMQ. The aim of this study was to increase FFMQ scores from pre-test to post-test, which would represent an increase in mindfulness following treatment. An increase of 2.00 occurred for the mean FFMQ scores from pre-test to post-test. The standard deviation increased by 15.31 following treatment (see Table 6; see Figure 1 for a graph of mean scores). This finding indicated little to no change in mindfulness levels following treatment.

Figure 1. The pre-and post-assessment scores for overall group means from the AAQ-II, the FFMQ, and the DASS-21.
Table 6
Mean Assessment Scores of the AAQ-II, DASS-21, and FFMQ

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Pre-Test (n=4)</th>
<th>Post-Test (n=4)</th>
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<tr>
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<td>M</td>
<td>SD</td>
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<tr>
<td>AAQ-II</td>
<td>30.75</td>
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<tr>
<td>DASS-21 (Depression)</td>
<td>7.00</td>
<td>6.22</td>
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<tr>
<td>DASS-21 (Anxiety)</td>
<td>12.50</td>
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<tr>
<td>DASS-21 (Stress)</td>
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<td>9.98</td>
</tr>
<tr>
<td>DASS-21 Total</td>
<td>35.00</td>
<td>19.90</td>
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<tr>
<td>FFMQ</td>
<td>116.75</td>
<td>5.38</td>
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</table>
Individual Intervention Results for Each Participant

**Participant 1.** Participant 1’s AAQ-II results indicate a decrease in experiential avoidance from pre-test to post-test assessments (see Figure 2; see Appendix G for assessment data table). Participant 1’s score decreased by 9 following treatment. Therefore, pre-and-post assessment scores reveal an overall increase in psychological flexibility following ACT.

![AAQ-II Scores for Participant 1](image)

*Figure 2.* The pre-and-post AAQ-II assessment scores for Participant 1.

Participant 1’s DASS-21 results indicated a decrease in all three components of the DASS-21 (depression, anxiety, and stress) from pre-test to post-test (see Figure 3; see Appendix G for assessment data table). DASS-21 depression scores decreased by 10 from pre-to-post assessment, while anxiety scores decreased by 13. Stress scores decreased by 18 from pre-to-post assessment. Participant 1 was in the moderate range for depression and the severe range for anxiety and stress prior to therapy. Following ACT, he decreased to the normal range for all three subscales.
Participant 1’s FFMQ results represent an overall increase in mindfulness from pre-test to post-test assessment (see Figure 4; see Appendix G for assessment data table). Specifically, scores for the observing, describing, acting, and nonreacting subscales from pre-to-post assessment increased by 3, 1, 6, and 5, respectively, while her score for the nonjudging subscale decreased from pre-to-post assessment (29 to 21). Overall, participant 1’s mindfulness increased by 7, from pre-test to post-test.
Participant 2. Participant 2’s AAQ-II results indicate an increase in experiential avoidance from pre-to-post assessment, thus simultaneously representing a decrease in psychological flexibility following ACT (see Figure 5; see Appendix G for assessment data table). Scores differed by 2 from pre-test to post-test.

![Figure 5](attachment:AAQ-II_scores_participant_2.png)

*Figure 5.* The pre-and-post AAQ-II assessment scores for Participant 2.

Participant 2’s DASS-21 results represent an increase in depression scores and a decrease in stress scores from pre-test to post-test, with no change in anxiety levels between pre-and-post assessment scores (see Figure 6; see Appendix G for assessment data table). More specifically, an increase of 2 occurred between pre- and post-assessment scores for the DASS-21 depression subscale. Stress scores decreased by 3 from pre-test to post-test, while anxiety scores remained the same. Prior to ACT, participant 2 was in the normal range for depression, the moderate range for anxiety, and the mild range for stress. At post-assessment, her results would place him in the normal range from depression and stress, while remaining in the moderate range for anxiety.
Participant 2’s FFMQ scores indicate her mindfulness levels increased overall from pre-test to post-test (see Figure 7; see Appendix G for assessment data table). Assessment scores increased on the describing and acting subscales (by 3 and 5, respectively), and decreased on the observing and nonreacting scales (by 2 and 2, respectively). Scores representing the nonjudging subscale remained consistent from pre-test to post-test, showing no difference between assessment periods. Participant 2’s overall mindfulness increased by 14 from pre-test to post-test.

**Participant 3.** Participant 3’s AAQ-II results indicate an increase in experiential avoidance from pre- to post-assessment (see Figure 8; see Appendix G for assessment data...
Scores differed by 6 from pre-test to post-test. These results would also indicate a simultaneous decrease in psychological flexibility.

![Figure 8](attachment:Figure8.png)

**Figure 8.** The pre-and-post AAQ-II assessment scores for Participant 3.

Participant 3’s DASS-21 results represent an increase in all three subscales from pre-test to post-test (see Figure 9; see Appendix G for assessment data table). An increase of 1 occurred between depression scores from pre-test to post-test. Anxiety scores from pre- to post-assessment reflect a difference of 3, while stress scores also represent an increase of 5 following treatment. Prior to treatment, participant 3’s assessment scores placed her in the normal range for depression, anxiety, and stress. Post-treatment, scores for all three subscales remain in the normal range despite the increase.

![Figure 9](attachment:Figure9.png)

**Figure 9.** The pre-and-post DASS-21 assessment scores for Participant 3.
Participant 3’s FFMQ scores indicate an overall increase in mindfulness from pre-test to post-test assessment (see Figure 10; see Appendix G for assessment data table). Furthermore, mindfulness scores increased on all five subscales. Each subscale represented an increased difference of 3 from pre-test to post-test, excluding the describing subscale, which saw a difference of 1 from pre- to post-assessment. Overall, an increase of 14 occurred between participant 3’s total mindfulness scores from pre-test to post-test.

![Figure 10](image)

*Figure 10. The pre-and-post FFMQ assessment scores for Participant 3.*

**Participant 4.** Participant 4’s AAQ-II results represent an increase in experiential avoidance from pre-to-post assessment (see Figure 11; see Appendix G for assessment data table). An increase of 2 occurred between AAQ-II scores pre- and post-assessment. As previously mentioned, this would also indicate a decrease in psychological flexibility.
Participant 4’s DASS-21 scores indicate a decrease in anxiety and stress scores, and a slight increase in depression scores from pre-test to post-test (see Figure 12; see Appendix G for assessment data table). DASS-21 depression scores increased by 1 from pre-test to post-test, while anxiety scores decreased by 9 and stress scores decreased by 5. Participant 4 remained in the normal range for depression following treatment and decreased from the extremely severe range to moderate range for anxiety, and from the mild to normal ranges for stress.

Participant 4’s FFMQ results represent a decrease in overall mindfulness levels from pre-to-post assessment (see Figure 13; see Appendix G for assessment data table). Scores for all five subscales decreased following treatment. Specifically, scores for the observing subscale decreased by 8, from pre-test to post-test. Describing scores decreased by 4 while Acting scores...
decreased by 1. Nonjudging scores reflected a difference of 11 between pre- and post-assessments, and scores for the nonreacting scale decreased by 3 following treatment. Overall, participant 4’s mindfulness scores saw a decreased difference of 27 between pre-test and post-test assessments.

Figure 13. The pre-and-post FFMQ assessment scores for Participant 4.
Chapter V: Discussion

This study hypothesised that all participants of the ACT group would experience an increase in psychological flexibility and mindfulness and a decrease in experiential avoidance and mental health symptomology. These factors were assessed using the AAQ-II, the DASS-21, and the FFMQ.

The results of this study were nonsignificant based on statistical analysis; thus, its hypothesis cannot be confirmed by the AAQ-II, the DASS-21, or the FFMQ assessments scores. However, clinical improvements and descriptive statistics are worth noting. Mean scores for the group indicate no change in mindfulness and psychological inflexibility, and an overall decrease in depression, anxiety, and stress, as measured by the DASS-21, following the intervention. Individually, results for assessment scores varied from pre-test to post-test. Of the four participants, one participant increased in psychological flexibility, while the other three showed a reverse effect. Depression scores increased for three out of four participants, while stress scores decreased for three out of four participants. Anxiety scores decreased for half of the participants and increased/did not change for the others. Overall, mental health symptomology varied for each participant following the intervention. Mindfulness scores varied with each subscale for all participants from pre-test to post-test. No follow-up was conducted.

Interpretation of Findings

A comprehensive review of the current literature suggests ACT to be a highly effective treatment for individuals with a variety of mental health disorders. This study may contribute, in part, to the evidence that suggests ACT is a viable treatment option. However, results for all assessment measures following treatment remain inconsistent and statistically nonsignificant. As a group, AAQ-II and FMMQ scores indicate no changes from pre-test to post-test. As the measures used in this study are entirely self-report, and therefore rely on the report of the individual, results are not always consistent or reliable. The reduction in the mean score may also be a result of the time of year at which the post assessments took place, as it was close to Christmas. During the post assessment period, all participants identified December as an especially "stressful" time of year. Participant 3 specifically stated that as a result, it was challenging to remember the coping strategies taught throughout the group. This may be a partial explanation for the lack of increase in the mean psychological flexibility score for the group.

AAQ-II. Assessment measures for pre-and-post examined the individual changes that participants experienced following treatment. The AAQ-II indicated decreases in psychological flexibility for all but one participant (Participant 1), and thus revealed an increase in experiential avoidance for those participants. As a group, no statistically significant change in psychological flexibility occurred from pre-test to post-test. As mentioned above, all four participants commented on the time of year in relation to their inability to implement their newfound coping strategies learned through ACT, thereby counteracting the effects and/or overall goal of treatment. Participant one, who increased in psychological flexibility, also saw increases in mindfulness and decreases in symptomology following ACT, according to the self-assessments. The individual results of the AAQ-II, while they contradict the original hypothesis of this study, do not necessarily indicate that the treatment was completely ineffective, as participants experienced documented improvements in other areas measured within the study.

DASS-21. Results of the DASS-21 depression category varied among participants; however, only participant 1 experienced a decrease in depression levels from pre-test to post-test.
Although participants were instructed to consider the past two weeks when completing the DASS-21, participants 2 and 4 both indicated feeling particularly “low” that day, which may have affected the way they scored their depressive symptoms at the time of the post assessments. It is important to note that while depression scores may have increased for three out of four participants, the range in which those scores fell did not change. That is the three participants who experienced an increase in depressions subscale scores began and ended treatment in the "normal" range for depressive symptoms. Individual DASS-21 anxiety scores varied among the four participants. Participant 3, who experienced an increase in anxiety from pre-test to post-test, was able to pinpoint a particular life event that had occurred the day before that was triggering her anxiety. Furthermore, she reported that this particular event was affecting her mood, but that prior to this event, she had seen a great reduction in her day-to-day anxiety levels. Much like with the DASS-21 depression subscale, individual anxiety scores may have increased or stayed the same following ACT, however, the ranges in which the subscale scores fell did not change. The DASS-21 stress subscale scores revealed decreases in stress for three out of four participants. Again, Participant 3, who also saw an increase in anxiety, had reported a stress-inducing event the day before, which may reflect her DASS-21 scores during post assessment. It is important to note again that the time of year may have had an adverse effect on DASS-21 scores of all four participants, as reported by participants during the post-assessment period. Similar to the depression and anxiety subscales, the ranges in which these scores fell were unaffected (all participants fell in the “normal” range, pre-and-post). Although the primary goal of this study was not to decrease mental health symptomology, group and individual assessment scores indicate a reduction of symptomology from pre-test to post-test. However, this conclusion cannot be support statistically; rather, with observed clinical changes and descriptive statistics only.

**FFMQ.** Individual FFMQ total scores increased for participants 1, 2, and 3 following ACT. Participant 4 saw a reduction in mindfulness scores at post-test. However, throughout the duration of therapy, though she consistently participated, she reported having difficulty with the visualisation aspect of certain mindfulness exercises and mastering the skill in general. In general, the findings of the FFMQ represent an increase in mindfulness for almost all participants, though no statistically significant change occurred from pre-test to post-test.

Clinical improvements and descriptive statistics suggest that ACT may be a beneficial treatment for adults with a variety of mental health disorders, in order to decrease mental health symptomology. While this exact study does not completely support the literature that proposes ACT to be an effective treatment for increasing psychological flexibility, some individual scores for psychological flexibility did increase following ACT. The completion of follow-up assessments would ensure the longevity and maintainability of these findings. Due to the small sample size in this study, and lack of follow-up assessment, these findings cannot be generalised to the general population. The inclusion of additional assessment measures possibly would have allowed for more quantitative data to be collected; however, the findings discovered may still contribute to the growing body of research surrounding the effectiveness of ACT as a treatment for adults with various mental health disorders.

**Relevance to the Literature Review**

**ACT with Various Mental Health Disorders.** Many of the studies reviewed in the literature review highlighted ACT’s effectiveness in treating a variety of mental health disorders, including treatment-resistant diagnoses and comorbid disorders. Although the findings of this
study did not support its initial hypothesis, ACT did prove to be effective at decreasing depression and anxiety, both of which can be considered treatment-resistant and comorbid, according to the reviewed literature.

**ACT and Psychological Flexibility.** As the primary hypothesis of this study was not supported by its findings (that is, that participants would experience an increase in psychological flexibility following ACT), the present study bears little relation in terms of psychological flexibility to the research by Rouleau (2014). The group and individual results of the present study represent an overall decrease in psychological flexibility, whereas Rouleau’s research showcases the opposite effect. This study was still able to generate an overall decrease in mental health symptomology, which according to Fledderus, Bohlmeijer, Fox, Schreurs, and Spinhoven (2013), is likely a byproduct of increased psychological flexibility. Therefore, it is possible that this study was more effective at affecting psychological flexibility than results indicate, though this is a far claim. Although this study was not able to achieve increased psychological flexibility, which Fledderus et al. identified as the primary goal of ACT, descriptive statistics for the group results did show that a secondary goal of ACT (decrease in symptomology) may have been met.

The current study and those discussed in the literature review yield somewhat similar results that may strengthen the application of ACT as an effective treatment for adults with various mental health disorders, though results were somewhat inconsistent. More specifically, the same literature suggests a correlation between ACT and increased mindfulness, as well as decreased symptomology. Less apparent in this study is the relationship between ACT and increased psychological flexibility; however, results reflect an almost unaffected level of this measure from pre-test or post-test, and the reviewed literature confirms ACT’s ability to increase psychological flexibility in adults with a variety of mental health concerns. In summation, the present study reflects a moderate relevance to the reviewed literature, as both suggest a correlation to ACT and increased mindfulness, increased psychological flexibility, and decreased symptomology.

**Strengths**

This study had notable strengths. This study used a heterogeneous sample, contributing to the generalizability and significance of its results. Results of the study highlight an overall decrease in the mean mental health symptomology score. This desired outcome may be, in part, due to the existing therapeutic rapport between the participants and the project’s cofacilitators, as participants were existing clients of the agency where the treatment took place. As a result, participants were likely more willing to participate in the group in order to reap the benefits of treatment. Participant improvements may have also been influenced by the frequent check-ins by co-facilitators to ensure participant understanding and to monitor progress. It should be noted that while the above-mentioned strengths are not necessarily strengths from an ACT perspective, and in support of the therapy itself, therapeutic rapport is important in the therapeutic process and can contribute to the overall success of therapy. As such, a strong therapeutic relationship between the study’s cofacilitators and participants is worth noting. Furthermore, the group protocol was based on an empirically supported manual developed by Boone and Myler (2012). Yet, it allowed modifications to accommodate the needs of the study’s participants, which this constitutes best practice for ACT. In-depth and extensive coverage of each process allowed time for participants to absorb all content and offered ample time for clarification, as needed. The assessments utilised to determine the effects of ACT pre-test and post-test may also be
considered a strength, as the assessments measured multiple ACT processes for a more accurate reflection of ACT’s effectiveness to treat various diagnoses.

**Limitations**

A number of limitations were also present in this study. Its small sample size clearly affects the generalizability of the results. All assessments were based on self-report data, which can raise concerns regarding the reliability of the data collected. In addition, many of the items assessed can often fluctuate day-to-day. Therefore, there is no guarantee that scores generated from the pre- and post-assessments are an accurate depiction of each participant’s overall levels from the past two weeks, as opposed to their levels at the exact time of the assessments. Time constraints meant that no follow-up was conducted, which meant maintenance following treatment could not be assessed. Attrition in the group resulted in a significant drop in participants for this study, of whom may have strengthened the validity and generalizability of the results. It possible that the sample used in this study was too heterogeneous, as factors that contribute to heterogeneity were not assessed. While literature does support ACT as a viable treatment for a variety of diagnoses, including multiple diagnoses in one sample may have resulted in too many extraneous variables, which may have affected the outcome of the study. In addition to varying in diagnoses, participants were also at various levels of their recovery. As a result, participants may not have been able to access the required level of support to facilitate understanding of the material presented, which may have also affected the results collected.

**Multilevel Challenges**

While group interventions can be highly effective, they are not without their challenges. Particularly when working with a vulnerable population with varying needs, a surplus of issues can arise. In this study, many of the challenges encountered were related to the execution of the treatment and the varying needs of such a heterogeneous sample. The present study is comprised of four levels of challenges: client, program, agency, and societal.

**Client level.** Due to the study’s lax inclusion criteria, the sample size resulted in individual who were at various points in their recovery with their mental health and/or addiction concerns. Therefore, some participants were in a better place mentally to accept, process, and model the presented material. For those who were not as advanced in their recovery, they may not have been able to receive the level of support required to fully comprehend the delivered material. This also caused for frustration between group members at times, as some participants required more direct attention from co-facilitators, which in turn may have slowed the progression of each session.

**Program level.** At the program level, challenges arose in trying to appropriately match the planned sessions with the needs of the group overall. Modifications were necessary in order to ensure participant understanding as best as possible. However, the need for modifications was not always evident until sessions had already begun and participant needs became more apparent. Therefore, the quality of some sessions may have been affected, as co-facilitators had to, at times, stray from the intended protocol.

**Agency level.** Inconsistencies in co-facilitation presented challenges at the agency level. More specifically, due to external factors, both facilitators were not always able to be present for every session, which may have affected the quality of the therapy delivered. Lack of staff training in ACT meant that clients were not always able to access direct support from their primary workers with their ACT material, which resulted in frustrations from both the
participants and facilitators (due to perceived lack of support). Space for therapy to occur was also a concern week-to-week.

**Societal level.** Stigma in relation to mental health and addictions presents numerous challenges at this level. In particular, it makes it challenging for participants to reap the full benefits of treatment, or treatment at all, for fear of being excluded or labelled as a result of their differences. In this case, some study participants did not see improvements in certain areas such as mindfulness due to lack of personal and community support and fear of being seen as "weak" for taking part in group therapy. More specifically, one participant identified feeling unsupported outside of the group, as her immediate family did not understand the severity of her mental health concerns or why she needed to address those concerns. This, in turn, made it challenging for her to practice and adopt the coping strategies without fear of judgment or being misunderstood.

Effectively supporting complex client needs, oversights in inclusion criteria, flexibility within program delivery, and societal stigma are examples of the types of challenges that can arise when working with adults and mental health. Being aware of and addressing these challenges as best as possible can allow for a greater chance of success at making notable changes in the lives of those that need it. Taking these challenges into consideration for further research can also improve the literature available so studies such as the present can allow for an effective change in the field moving forward.

**Implications for the Behavioural Psychology Field**

As a third-wave therapy, any research supporting ACT as a beneficial treatment for a variety of mental health diagnoses is imperative for its continued use. By reviewing the efficacy of such a treatment, findings can be analysed for their significance, but also furthered, to continue to develop, and improve the scope of research involving ACT. This not only benefits the field of research but the individuals who will eventually receive the therapy to improve their overall quality of life. This research may result in improved and expanded services clients can receive in order to support them as best as possible. More specifically, this study highlights the importance of offering individualized treatment within a group setting, to properly target specific needs of each group member. This is of the utmost importance when groups are entirely heterogeneous in terms of diagnoses and levels of support required. While manuals and protocols are intended to be followed quite closely, the degree of flexibility in terms of modifications made can be crucial to facilitating higher levels of desired change within group participants. Conversely, the implications for allowing too much flexibility must also be considered. This study also emphasizes the importance of taking steps to mitigate the risk of attrition, so efforts to contribute meaningful and impactful research are not wasted. The present study is a reminder that while studies with heterogeneous samples maintain clear benefits in terms of the generalizability of results, participant functioning independent of diagnoses must be considered to ensure individual needs are met. Therefore, specific screening processes and inclusion/exclusion criteria are important for ensuring meaningful study outcomes.

**Recommendations for Future Research**

Moving forward, future research that will continue to assess the efficacy of ACT is strongly encouraged. Although evidence for ACT as a viable treatment option is increasing, it is still considered a third-wave therapy; therefore, research highlighting its generic applicability and efficient implementation should continue. Additionally, the inclusion of one or more follow-
up assessments within a study may be beneficial for assessing the potential long-lasting effects of ACT on an individual’s multifaceted functioning. Larger sample sizes will be helpful for confirming generalizability to the general population. It may be interesting to assess each individual ACT process in order to determine which process when targeted, creates the highest level of sustainable change within an individual. Obtaining participant consent and consistent data collection each time the ACT group is run may allow for more frequent evaluation of results and subsequent modifications to treatment that will benefit future participants.

Research may also benefit from obtaining more quantitative data related to the dependent variables typically assessed, including psychological flexibility, experiential avoidance, mindfulness, and symptomology. Including additional measures that could be used to assess client progress weekly may offer additional information regarding individual differences and their own changes as they progress through treatment. Additionally, including a self-report measure not typically used in ACT research could potentially offer additional support for the effectiveness of ACT, such as its effect on one's overall quality of life (assessed using the Quality of Life inventory, or QOLI). Studies comparing the efficacy of ACT in individual versus group format, and with which specific diagnoses, may help to diversify the ways in which ACT can be delivered successfully. Specifically, it may help to determine the best type of heterogeneous group to benefit from ACT. Furthermore, it may be helpful to assess the effects of group ACT in combination with one-to-one ACT, in order to determine the potential impact on an individual's overall learning and behavioural change following treatment. Conducting a comparison between a control group receiving only group ACT and a treatment group receiving both group and individual ACT may be an effective method of generating this information.

Conclusion

Overall, this hypothesis of this study was not supported by its findings. However, clinical improvements and descriptive statistics may be successful in supporting the efficacy of ACT as it relates to decreasing mental health symptomology when treating adults with a variety of mental health concerns. While the original hypothesis of this study was not completely supported, and findings varied on an individual level, the application of ACT in a group setting did result in decreased symptomology overall. Limitations should be addressed in further research to allow for greater success with potential clients moving forward. Once changes to recruitment, design and implementation have been made, the ability of ACT to affect change for individuals with varying degrees of needs in future groups may be increased, which can, in turn, positively contribute to the body of research supporting ACT as an effective therapy for adults with a wide range of mental health concerns.
References


Appendix A
ACT Psychological Flexibility Hexaflex
Appendix B
REB Letter of Approval

November 14, 2016

Principal Investigator: Erin Kimble
Research Study: 2016-REC10KE - Re-evaluating the Efficacy of a Group Pilot Study Using Group and Individual Acceptance and Commitment Therapy with an Adult Female with Borderline Personality Disorder, Anorexia Nervosa, and Depression

On [October 28, 2016], amendment to this application was subject to:

☑ Full Board Review  ☑ Delegated Review

Dear Erin Kimble,

I am writing to advise you that the St. Lawrence College Research Ethics Committee – Psychology (REC-P) on behalf of the St. Lawrence College Research Ethics Board (SLC-REB) has granted Approval to the amendment dated [November 14th, 2016] for the above-named research study. You may now implement your amendment.

Please note that you have one year to complete the project from the time of the Initial approval (October 14, 2016). Should you require more time to complete your project, you will be required to submit a Request for Renewal or Amendment Form, in order to obtain ethics approval for your project. This must be submitted prior to SLC-REB approval expiry.

Any further changes to the approved protocol or consent materials must be reviewed and approved through the amendment process prior to its implementation. As the PI, you must submit both a Request for Amendment of an Approved Project Form and a revised SLC-REB Research Application and/or consent materials.

Any adverse or unanticipated events should be reported to the SLC-REB as soon as possible. The SLC-REB reserves the right to review your file at any time to ensure that research is being conducted in accordance with all SLC policies.

Once your project is complete, you are required to complete a SLC-REB Termination of Project Form. This form must be submitted as a final report about your research to the SLC-REB.

Best wishes for the successful completion of your project.

Sincerely,

James Morris-Pocock
Chair, Research Ethics Board
Appendix C
Informed Consent Form

**Project Title:** Re-evaluating the Efficacy of a Group Pilot Study using Group Acceptance and Commitment Therapy with Adults with Various Mental Health Disorders

**Principle investigator:** Erin Kimble  
**Name of supervisor:** Tracy Rouleau  
**Name of institution:** St. Lawrence College  
**Name of agency:** Addictions and Mental Health Services (AMHS) – KFL&A

**Invitation**
You are being invited to take part in a research study. I am a student in my 4th year of the Behavioural Psychology program at St. Lawrence College. I am currently on placement at AMHS-KFL&A, from September 6th to December 9th, 2016. As part of this placement, I am completing a research project (called an applied thesis). I would like to ask you for your help to complete this project. The information in this form will help you understand my project. Please read the information carefully and ask all the questions you might have before you decide if you want to take part.

**Why is this research study being done?**
My project is designed to test the effects of acceptance and commitment therapy (ACT) on your overall mental health. I will be using questionnaires to assess multiple aspects of your mental health prior to and following the program. It is my intention that these sessions will provide you with strategies to help you improve your mental health and your overall quality of life. Your thoughts and opinions are important to us and I am asking for your help to make this program as successful as possible for yourself and the future clients of AMHS-KFL&A.

**What will you need to do if you take part?**
If you chose to take part in this study, you will be asked to attend one session per week for approximately 10 weeks. The sessions will be held at AMHS-KFL&A every Monday afternoon and will last approximately 3 hours. ACT sessions will include psychoeducation of ACT components (acceptance, defusion, self-as-context, mindfulness, values, and committed action), related ACT exercises, and mindfulness activities. I will run these sessions independently, under supervision from the project’s co-facilitator, Tracy Rouleau, as needed. At the end of the program, you will be asked to complete the same questionnaires as you did at the beginning of the group sessions, which will take approximately 30 minutes to complete.

**What are the potential benefits of taking part?**
The potential benefits of participating in this study may include an improvement in mental well-being, which may improve your overall quality of life. Additionally, this study may offer you a more solid understanding of yourself and your mental health, and provide you with additional coping strategies to help maintain any changes made throughout the program.

**What are the potential benefits of this research study to others?**
Information from this study may be used to help improve the program for other clients in the future, with a variety of mental health concerns.

**What are the potential disadvantages or risks of taking part?**
The risks of participating in this study are minimal. Some of the information discussed may cause you physical, psychological, and/or emotional discomfort.

**What happens if something goes wrong?**
If at any time you experience strong, negative, and/or emotional responses to the topics, exercises taught throughout the program, or while completing the questionnaires, you may talk to myself, Tracy Rouleau, or the AMHS-KFL&A Crisis Team.

**Will the information you collect from me in this project be kept private?**
All information obtained in this study will be kept strictly confidential unless required by law. All questionnaires and consent forms will have your name, but will be kept in a locked filling cabinet at AMHS-KFL&A. Any data inputted into a computer file will be done so without using any identifying information (i.e. your name), and will be kept in a password-protected file on a secure, password-protected computer. Your name or any other identifiers will not be used in any reports, publications, or presentations resulting from this project. All study documents and results will be kept on file in a locked filing system at AMHS-KFL&A for 10 years.

**Do you have to take part?**
Taking part is voluntary. It is up to you to decide whether or not to take part in this research project. If you do decide to take part, you will be asked to sign this consent form. Additionally, if you agree to take part, you are may stop at any time without giving any reason and without giving any reason and without experiencing any negative effects or penalties. If you do decide to withdraw, please speak to me or Tracy Rouleau before or upon doing so. If you choose to withdraw from the study, you may ask that your data not be used in any way. Should you choose not to take part in this study, you can still continue to use the services at AMHS-KFL&A.

**Contact for further information**
This research project has received ethical clearance from the Research Ethics Committee for Behavioural Psychology (REC-P) under the authority of the St. Lawrence College Research Ethics Board (SLC-REB). The project was developed under the supervision of Sarah Horsford, MEd, RP, CCC, my supervisor from St. Lawrence College. I appreciate your cooperation and if you have any additional questions, feel free to ask me, Erin Kimble (ekimble27@sl.on.ca). You can also contact my College Supervisor, Sarah Horsford (shorsford@sl.on.ca). If you have concerns about the way this research is being conducted or about your rights as a participant, you may contact the SLC-REB Chair at reb@sl.on.ca.
Consent
If you agree to take part in this research project, please complete the following form and return it to me as soon as possible. A copy of this signed document will be given to you for your own records. An additional copy of your consent will be retained at the agency and in a secure location at St. Lawrence College.
By signing this form, I agree that:

☐ The study has been explained to me.

☐ All my questions were answered.

☐ Possible harm and discomforts and possible benefits (if any) of this study have been explained to me.

☐ I understand that I have the right not to participate and the right to stop at any time.

☐ I am free now, and in the future, to ask any questions I have about the study.

☐ I have been told that my personal information will be kept confidential.

☐ I understand that no information that would identify me will be released or printed without asking me first.

☐ I understand that I will receive a signed copy of this consent form.

I hereby consent to take part.

___________________________________________________________________________
Participant Name 
Signature of Participant 
Date 

___________________________________________________________________________
Student Printed Name 
Signature of Student 
Date
Appendix D
Depression Anxiety Stress Scale (DASS-21)

<table>
<thead>
<tr>
<th>DASS</th>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The rating scale is as follows:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 Did not apply to me at all</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Applied to me to some degree, or some of the time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Applied to me to a considerable degree, or a good part of the time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Applied to me very much, or most of the time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 I found myself getting upset by quite trivial things</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2 I was aware of dryness of my mouth</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3 I couldn't seem to experience any positive feeling at all</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4 I experienced breathing difficulty (eg. excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5 I just couldn't seem to get going</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6 I tended to over-react to situations</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7 I had a feeling of shakiness (eg. legs going to give way)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8 I found it difficult to relax</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9 I found myself in situations that made me so anxious I was most relieved when they ended</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10 I felt that I had nothing to look forward to</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>11 I found myself getting upset rather easily</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>12 I felt that I was using a lot of nervous energy</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>13 I felt sad and depressed</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>14 I found myself getting impatient when I was delayed in any way (eg. lifts, traffic lights, being kept waiting)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>15 I had a feeling of faintness</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>16 I felt that I had lost interest in just about everything</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>17 I felt I wasn't worth much as a person</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>18 I felt that I was rather touchy</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>19 I perspired noticeably (eg. hands sweaty) in the absence of high temperatures or physical exertion</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>20 I felt scared without any good reason</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>21 I felt that life wasn't worthwhile</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
### Appendix E
Five Facet Mindfulness Questionnaire (FFMQ)

<table>
<thead>
<tr>
<th>Subject number</th>
<th>Date</th>
</tr>
</thead>
</table>

#### 5-FACET MINDFULNESS QUESTIONNAIRE

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>never or very rarely true</strong></td>
<td><strong>rarely true</strong></td>
<td><strong>sometimes true</strong></td>
<td><strong>often true</strong></td>
<td><strong>very often or always true</strong></td>
</tr>
</tbody>
</table>

____ 1. When I’m walking, I deliberately notice the sensations of my body moving.
____ 2. I’m good at finding words to describe my feelings.
____ 3. I criticize myself for having irrational or inappropriate emotions.
____ 4. I perceive my feelings and emotions without having to react to them.
____ 5. When I do things, my mind wanders off and I’m easily distracted.
____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
____ 7. I can easily put my beliefs, opinions, and expectations into words.
____ 8. I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted.
____ 9. I watch my feelings without getting lost in them.
____ 10. I tell myself I shouldn’t be feeling the way I’m feeling.
____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
____ 12. It’s hard for me to find the words to describe what I’m thinking.
____ 13. I am easily distracted.
____ 14. I believe some of my thoughts are abnormal or bad and I shouldn’t think that way.
____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
____ 16. I have trouble thinking of the right words to express how I feel about things.
____ 17. I make judgments about whether my thoughts are good or bad.
____ 18. I find it difficult to stay focused on what’s happening in the present.
____ 19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.
____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
____ 21. In difficult situations, I can pause without immediately reacting.
____ 22. When I have a sensation in my body, it’s difficult for me to describe it because I can’t find the right words.

**PLEASE TURN OVER**
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>never or very rarely true</td>
<td>rarely true</td>
<td>sometimes true</td>
<td>often true</td>
<td>very often or always true</td>
</tr>
</tbody>
</table>

23. It seems I am “running on automatic” without much awareness of what I’m doing.
24. When I have distressing thoughts or images, I feel calm soon after.
25. I tell myself that I shouldn’t be thinking the way I’m thinking.
26. I notice the smells and aromas of things.
27. Even when I’m feeling terribly upset, I can find a way to put it into words.
28. I rush through activities without being really attentive to them.
29. When I have distressing thoughts or images I am able just to notice them without reacting.
30. I think some of my emotions are bad or inappropriate and I shouldn’t feel them.
31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
32. My natural tendency is to put my experiences into words.
33. When I have distressing thoughts or images, I just notice them and let them go.
34. I do jobs or tasks automatically without being aware of what I’m doing.
35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
36. I pay attention to how my emotions affect my thoughts and behavior.
37. I can usually describe how I feel at the moment in considerable detail.
38. I find myself doing things without paying attention.
39. I disapprove of myself when I have irrational ideas.
**Appendix F**

Acceptance and Action Questionnaire II (AAQ-II)

**AAQ-II**

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>never true</td>
<td>very seldom true</td>
<td>seldom true</td>
<td>sometimes true</td>
<td>frequently true</td>
<td>almost always true</td>
<td>always true</td>
</tr>
</tbody>
</table>

1. **My painful experiences and memories make it difficult for me to live a life that I would value.**

2. **I’m afraid of my feelings.**

3. **I worry about not being able to control my worries and feelings.**

4. **My painful memories prevent me from having a fulfilling life.**

5. **Emotions cause problems in my life.**

6. **It seems like most people are handling their lives better than I am.**

7. **Worries get in the way of my success.**

This is a one-factor measure of psychological inflexibility, or experiential avoidance. Score the scale by summing the seven items. Higher scores equal greater levels of psychological inflexibility.
## Appendix G
Participant Assessment Tables

### Table 1
*Summary of Assessment Scores from Participant 1*

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>AAQ-II</td>
<td>35</td>
<td>26</td>
<td>-9</td>
</tr>
<tr>
<td>DASS-21 (Depression)</td>
<td>16</td>
<td>6</td>
<td>-10</td>
</tr>
<tr>
<td>DASS-21 (Anxiety)</td>
<td>16</td>
<td>3</td>
<td>-13</td>
</tr>
<tr>
<td>DASS-21 (Stress)</td>
<td>26</td>
<td>8</td>
<td>-18</td>
</tr>
<tr>
<td>FFMQ (Observe)</td>
<td>26</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>FFMQ (Describe)</td>
<td>22</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>FFMQ (Act/Aware)</td>
<td>21</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>FFMQ (Nonjudging)</td>
<td>29</td>
<td>21</td>
<td>-8</td>
</tr>
<tr>
<td>FFMQ (Nonreacting)</td>
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<td>5</td>
</tr>
<tr>
<td>FFMQ (Total)</td>
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<td>7</td>
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</table>

### Table 2
*Summary of Assessment Scores from Participant 2*

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<th>Post-Test</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>AAQ-II</td>
<td>25</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>DASS-21 (Depression)</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>DASS-21 (Anxiety)</td>
<td>12</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>DASS-21 (Stress)</td>
<td>16</td>
<td>13</td>
<td>-3</td>
</tr>
<tr>
<td>FFMQ (Observe)</td>
<td>34</td>
<td>32</td>
<td>-2</td>
</tr>
<tr>
<td>FFMQ (Describe)</td>
<td>24</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>FFMQ (Act/Aware)</td>
<td>21</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>FFMQ (Nonjudging)</td>
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</tr>
<tr>
<td>FFMQ (Nonreacting)</td>
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<tr>
<td>FFMQ (Total)</td>
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<td>137</td>
<td>14</td>
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### Table 3
*Summary of Assessment Scores from Participant 3*

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<th>Post-Test</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>AAQ-II</td>
<td>28</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>DASS-21 (Depression)</td>
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<td>7</td>
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</tr>
<tr>
<td>DASS-21 (Anxiety)</td>
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<td>3</td>
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<tr>
<td>DASS-21 (Stress)</td>
<td>2</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>FFMQ (Observe)</td>
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<td>23</td>
<td>3</td>
</tr>
<tr>
<td>FFMQ (Describe)</td>
<td>24</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>FFMQ (Act/Aware)</td>
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<td>27</td>
<td>3</td>
</tr>
<tr>
<td>FFMQ (Nonjudging)</td>
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<tr>
<td>FFMQ (Nonreacting)</td>
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<td>4</td>
</tr>
<tr>
<td>FFMQ (Total)</td>
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<td>124</td>
<td>14</td>
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</table>
Table 4
Summary of Assessment Scores from Participant 4

<table>
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<tr>
<th>Assessments</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAQ-II</td>
<td>35</td>
<td>37</td>
<td>2</td>
</tr>
<tr>
<td>DASS-21 (Depression)</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>DASS-21 (Anxiety)</td>
<td>20</td>
<td>11</td>
<td>-9</td>
</tr>
<tr>
<td>DASS-21 (Stress)</td>
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<td>-5</td>
</tr>
<tr>
<td>FFMQ (Observe)</td>
<td>27</td>
<td>19</td>
<td>-8</td>
</tr>
<tr>
<td>FFMQ (Describe)</td>
<td>24</td>
<td>20</td>
<td>-4</td>
</tr>
<tr>
<td>FFMQ (Act/Aware)</td>
<td>22</td>
<td>21</td>
<td>-1</td>
</tr>
<tr>
<td>FFMQ (Nonjudging)</td>
<td>27</td>
<td>16</td>
<td>-11</td>
</tr>
<tr>
<td>FFMQ (Nonreacting)</td>
<td>16</td>
<td>13</td>
<td>-3</td>
</tr>
<tr>
<td>FFMQ (Total)</td>
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<td>89</td>
<td>-27</td>
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