Exercising the Effects of Previous Cognitive Behavioural Therapy on Acceptance and Commitment Therapy

by

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Dedication

To my wonderful family who were the first people to teach me what it means to accept.

“No life is a waste ... the only time we waste is the time we spend thinking we are alone.”

- Mitch Albom
Abstract

Cognitive behavioural therapy (CBT) and acceptance and commitment therapy (ACT) are two empirically-based approaches for treating anxiety and depression. However, CBT and ACT are no more efficacious than other mainstream therapies, and it is unknown if CBT and ACT would enhance each other’s techniques when delivered sequentially. This study sought to investigate the impact of previous CBT on ACT. Eight participants, who had difficulties with depression and anxiety, were recruited from a community vocational rehabilitation agency. The participants were organized into two groups: individuals who had attended the agency’s CBT-based program and individuals who had not. Both groups attended two ACT sessions a week for six weeks. It was hypothesized that the previous CBT group (PCBT) would have greater decreases in depression and anxiety symptoms and greater increases in mindfulness and psychological flexibility than the non-CBT group (NCBT). Depression and anxiety symptoms, mindfulness, and psychological flexibility were measured using the Depression Anxiety Stress Scale 42, Five Facet Mindfulness Questionnaire, Acceptance and Action Questionnaire – II, and caseworker rating scale. A Friedman test and Wilcoxon Signed Rank test were utilized to determine the impact of ACT on all participants. Percentage of improvement, mean, and standard deviation were used to analyze the results between the two groups. Overall, the hypothesis was not supported. At post-test and at the 2-month follow-up, the NCBT group had greater decreases in depression and anxiety symptoms and greater increases in mindfulness and psychological flexibility. These results suggested that previous experience with CBT might reduce the benefits of ACT. However, limitations, such as a lack of participant exclusion criteria and a lack of control over the participants’ past psychotherapy, were present. Therefore, these results should be interpreted with caution. Future studies should further examine the relationship between CBT and ACT.
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Chapter I: Introduction

In 2012, Statistics Canada reported that 3.9% of disabilities are mental health-related. Furthermore, 59.8% of people with a mental health-related disability reported that it affected their choice of career, and 79.6% of those with mental-health related disabilities disclosed that it inhibited them from working (Statistics Canada, 2012). Among these mental health disabilities, depression and anxiety were identified as two of the most common (Statistics Canada, 2012).

Statistics Canada (2017) found that 11% of people from ages 15 to 24 have been clinically depressed at least once in their life, and the depression has mainly affected their socialization and intimate relationships. Depression has been associated with low neural connectivity to the amygdala, which assists with emotion regulation and decision-making (DelDonno et al., 2017). Depression can be characterized by crying episodes, lack of motivation, feelings of hopelessness, and loss of enjoyment in pleasurable activities; the latter can be referred to as anhedonia (Nevid, Greene, Johnson, Taylor, & MacNab, 2015). More specifically, anhedonia can be a product of anxiety that eventually leads to depression (Winer et al., 2017).

Similar to depression, anxiety is associated with changes in parts of the brain that contribute to emotion regulation, such as the inferior frontal gyrus and the orbitofrontal cortex (Andreescu et al., 2017). Anxiety can manifest in numerous ways. It has been found to correlate with frequent migraines (Peres, Mercante, Tobo, Kamei, & Bigal, 2017) and lead to nausea, difficulties sleeping, lack of concentration, and irritability (Nevid et al., 2015). Additionally, Revicki et al. (2012) stated that anxiety, particularly generalized anxiety disorder (GAD), can impede psychological wellbeing and work efficiency. Overall, depression and anxiety can impact an individual socially, physically, and emotionally (DelDonno et al., 2017; Peres et al., 2017; Statistics Canada, 2017). There are several therapies used to treat these disorders, two of which are cognitive behavioural therapy (CBT) and acceptance and commitment therapy (ACT).

**CBT**

CBT is one of the most widely studied psychotherapies to treat depression and anxiety (Cuijpers et al., 2014). This therapy is based on the notion that thoughts, emotions, and behaviours influence and interact with each other (Wright, Basco, & Thase, 2006). CBT seeks to modify automatic negative thoughts through cognitive restructuring and reduce physical anxiety through relaxation techniques, such as deep breathing (Wright et al., 2006). Although CBT has demonstrated to be effective for anxiety and depression (Butler, Chapman, Forman, & Beck, 2006; Vittengl, Clark, Dunn, & Jarrett, 2007), recent studies have shown that CBT is no more efficacious than other psychotherapies, such as interpersonal therapy or brief systemic therapy (Barcons, Cunillera, Miquel, Ardévol, & Beyebach, 2016; Cuijpers et al., 2014). Furthermore, CBT has been criticized for its techniques of thought challenging and thought modification (Longmore & Worrell, 2007). New therapies, like ACT, have transpired to address the criticisms of CBT.

**ACT**

ACT is an emerging therapy that is gaining an empirical basis for treating depression and anxiety (Craske et al., 2014; Eilenberg, Hoffmann, Jensen, & Frostholm, 2017; Gumley et al., 2017; Jansen & Morris, 2017). The primary goal of ACT is to improve psychological flexibility through six components: acceptance, contact with the present moment, values, committed action, observing-self, and cognitive defusion (Harris, 2007). This therapy’s approach to treatment
differs from CBT as ACT seeks to accept automatic negative thoughts and decrease the emotional distress surrounding those thoughts through cognitive defusion (Blonna, 2010). Furthermore, ACT also puts more emphasis on mindfulness (Blonna, 2010). Despite providing favourable outcomes, Hacker, Stone, and MacBeth (2016) demonstrated that there is inadequate empirical evidence to support that ACT is just as beneficial as CBT.

Although ACT and CBT have an empirical basis and are often compared (Craske et al., 2014; Davies, Niles, Pittig, Arch, & Craske, 2015; Mesri et al., 2017; Wolitzky-Taylor, Arch, Rosenfield, & Craske, 2012), both have their limitations. For example, CBT’s cognitive techniques have been criticised and it has been found that CBT is no better than other mainstream therapies (Cuijpers et al., 2014; Longmore & Worrell, 2007), while ACT lacks empirical support in comparison to CBT (Hacker, Stone, & MacBeth, 2016). It is unknown if CBT and ACT would enhance each other’s techniques when delivered sequentially. These therapies share similar components with respect to mindfulness and the psychoeducation of cognitions. In addition, less traditional forms of CBT have included elements of ACT, such as mindfulness-based CBT or ACT-influenced CBT (Moorhead, Winfield, & Freeston, 2016; Strandskov et al., 2017). Therefore, this study sought to examine the effectiveness of ACT with individuals who had previously completed a CBT-based group program compared to individuals who had not completed a CBT-based group program. It was hypothesized that individuals who had previously participated in a CBT-based group therapy would display greater increases in mindfulness and psychological flexibility, and decreases in anxiety and depression symptoms.

Thesis Overview

This thesis encompasses a review of recent academic literature surrounding CBT and ACT. It also contains a detailed explanation of the methods used, which includes descriptions of the participants, setting, and procedures. A statistical and descriptive analysis of the results and a discussion surrounding the interpretation of those results is incorporated in this thesis. Furthermore, the discussion includes a description of the strengths and weaknesses of this study, an exploration of multilevel challenges, and future recommendations.
Strengths and Limitations of CBT

CBT has proven to be efficacious in treating depression in a group setting (Nielsen, 2015) and improving emotion regulation and life satisfaction (Jazaieri, Goldin, & Gross, 2017). A meta-analysis examining 28 different studies demonstrated that in the initial phase of a major depressive episode, CBT had a 61% better outcome than pharmacotherapy (Vittengl et al., 2007). Similarly, Schwartze et al. (2017) conducted a meta-analysis with 15 randomized controlled trials for group CBT. They found that group CBT was effective in treating panic disorder and agoraphobia. Furthermore, Butler, Chapman, Forman, and Beck (2006) reviewed CBT meta-analyses and concluded that CBT was the most effective treatment for depression and anxiety disorders; however, recent studies are demonstrating different results.

Ali et al. (2017) found that low-intensity CBT produced high relapse rates with 52.8% of the participants relapsing within a year. Similarly, Conradi, Bos, Kamphuis, and de Jonge (2017) conducted a 10-year follow-up study on brief CBT for depression, and found that 76.5% of participants had another depressive episode. Additionally, there were no significant differences between the brief CBT intervention group and other treatment groups, such as a psychiatric consultation combined with psychoeducation sessions at the 10-year follow-up (Conradi, Bos, Kamphuis, & de Jonge, 2017).

Comparably, Barcons, Cunillera, Miquel, Ardévol, and Beyebach (2016) found that brief systemic therapy was just as beneficial as CBT in a health care setting for participants with depression and anxiety. In addition, Cuijpers, Donker, Weissman, Ravitz, and Cristea (2016) found equivalent treatment outcomes for participants who received CBT for anxiety and participants who received interpersonal therapy for anxiety. Corroborating this finding, Cuijpers et al.’s (2014) meta-analysis found that CBT was no more efficacious than other psychotherapies, such as interpersonal therapy or problem-solving therapy. Furthermore, CBT’s approach to modifying negative thoughts has been the subject of controversy. Some scholars argue that challenging negative thoughts is irrelevant and unnecessary for treatment (Longmore & Worrell, 2007), whereas some scholars assert that those are erroneous conclusions based on a lack of understanding of the cognitive techniques (Hofmann, 2008). Although CBT has a strong empirical basis, the controversy surrounding its cognitive treatment techniques and the mixed results on CBT’s efficacy in comparison to other therapies demonstrate that there are still opportunities for improvement.

Strengths and Limitations of ACT

ACT has been found to be beneficial for a variety of anxiety disorders as well as depression. A small case series utilizing 12 individual ACT sessions for three participants with posttraumatic stress disorder (PTSD) and psychosis displayed favourable results (Jansen & Morris, 2017). Significant improvements were found in the participants’ PTSD, anxiety, and depression symptoms and increases were found in their psychological flexibility (Jansen & Morris, 2017). Similarly, Harvey, Henrickson, Bimler, and Dickson (2017) compared group ACT-based sessions for participants who had anger and substance use issues with a control group. They found greater reductions in the participants’ anger and anxiety scores compared to the control group and small reductions in alcohol use. Arch and Mitchell (2016) further exemplified the versatility of ACT when they used group ACT sessions with 42 participants who
had cancer. They found significant decreases in the participants’ anxiety, depression, and fatigue as well as an increase in their psychological flexibility. However, all of these studies utilized case studies or quasi-experimental designs, which are not very robust research designs; therefore, the generalization of the results are limited.

**ACT randomized controlled trials.** Eilenberg, Fink, Jensen, Rief, and Frosthholm (2016) conducted a randomized controlled trial with 126 participants who had severe health anxiety. Nine 3-hour group ACT sessions were administered and greater decreases in anxiety were found in the ACT group than the control group (Eilenberg, Fink, Jensen, Rief, & Frosthholm, 2016). These results remained significant even at the 10-month follow-up (Eilenberg et al., 2016). Additionally, Eilenberg et al. used researchers who were blind to the data entry and analyses, which eliminated issues of bias and added legitimacy to the results. Confounding variables, such as changing medications or trying other therapies were not thoroughly monitored, and participants were only advised against changing any of their usual activities; therefore, it is possible that factors other than the ACT session induced the decreases in anxiety (Eilenberg et al., 2016). Furthermore, supervision on the therapists’ adherence to ACT was not mentioned in the study, so it is unknown how strictly the facilitators adhered to the ACT principles.

Folke, Parling, and Melin (2012) encountered similar limitations to Eilenberg et al.’s (2016) study when they evaluated the effectiveness of brief ACT for people who were on long-term sick leave from work due to depression. Thirty-four participants were randomized into an ACT group and a control group (Folke, Parling, & Melin, 2012). Although significant decreases in depression symptoms and increases in general health and life quality were found in the ACT group, Folke et al. acknowledged that the reductions were not as large as other studies. The small effect of the ACT treatment group compared to the control group could be attributed to the non-uniformity of the control group (Folke et al., 2012). Similar to Eilenberg et al.’s study, there was a possibility that the participants in the control group were seeking alternative treatments (Folke et al., 2012). Additionally, there was no tool for measuring the therapists’ adherence to the ACT principles given that the facilitators were relatively inexperienced (Folke et al., 2012).

In contrast, Gumley et al. (2017) compared the standard care received by those with schizophrenia and depression to the standard care plus ACT. Standard care was defined as taking an antipsychotic medication and having a follow-up appointment with a mental health professional (Gumley et al., 2017). The 15 ACT sessions were delivered over five months and mixed results were found (Gumley et al., 2017). The ACT group had significant decreases in depression scores from only one of the depression measures at the end of treatment; furthermore, the significant decrease was no longer apparent at the 10-month follow-up (Gumley et al., 2017). Similarly, psychological flexibility in the ACT group had a significant increase at post-treatment compared to the standard care group, but the significance was not maintained at the 10-month follow-up (Gumley et al., 2017).

The findings of Finnes, Ghaderi, Dahl, Nager, and Enebrink (2017) displayed a similar pattern of mixed results. They randomized 352 participants, who had multiple work absences due to mental health, into four groups: ACT only, work dialogue intervention (WDI) only, ACT + WDI, and treatment-as-usual (TAU). There were significant decreases in anxiety and depression symptoms for the ACT + WDI group as well as the ACT only group; however, the participants from the ACT + WDI group had a slight increase in their work absences (Finnes, Ghaderi, Dahl, Nager, & Enebrink, 2017). Furthermore, there were no significant differences between the treatment groups and the TAU group for depression and anxiety symptoms after the 9-month follow-up (Finnes et al., 2017). This study did not have stringent participant diagnostic criteria,
so the participants had different diagnoses, which may have contributed to the inconclusive results (Finnes et al. 2017). Overall, randomized controlled trials have found moderately favourable results for the efficacy of ACT.

**ACT meta-analyses.** Ruiz (2012) analyzed 16 comparison studies of ACT and CBT. He found that ACT proved to be superior to CBT in 11 of the studies. Despite beneficial outcomes for ACT, Ruiz acknowledged the limitations of the meta-analysis. Many of the studies that were examined had small sample sizes, were non-randomized controlled trials, and had several researchers that had a vested interest in ACT (Ruiz, 2012). While a publication bias was detected in the meta-analysis, Ruiz highlighted that the results of the statistical analysis conducted on the bias indicated that it did not significantly impact the study’s outcome.

Obtaining similar results, Bluett, Homan, Morrison, Levin, and Twohig (2014) analyzed 63 studies that examined ACT and anxiety disorders. They found that ACT demonstrated moderate effects in treating GAD, obsessive compulsive disorder, and social phobia and it was equally as beneficial as CBT for anxiety disorders.

In contrast, A-Tjak et al. (2015) examined 39 studies that used ACT. Although ACT proved to be beneficial in comparison to control conditions, ACT was not more effective than cognitive therapy, CBT, or habituation-based exposure for anxiety and depression (A-Tjak et al., 2015). A-Tjak et al. stated that to further support these findings a larger selection of studies should be used and more studies with respect to specific anxiety disorders should be evaluated.

Similarly, Hacker et al. (2016) evaluated 46 randomized controlled trials using ACT with anxiety and depression. They found that ACT had a moderate effect size in studies with control groups; however, ACT produced only small effect sizes in studies that included other treatment conditions (Hacker et al., 2016). Overall, Hacker et al. stated that ACT was no more efficacious than other therapies and lacked adequate evidence when compared to mainstream therapies, such as CBT.

Although there are mixed results surrounding the efficacy of ACT in comparison to other treatments, ACT has been found to be superior to other mindfulness-based approaches. Veehof, Trompetter, Bohlmeijer, and Schreurs (2016) examined 25 studies that involved ACT and other mindfulness-based approaches for pain, anxiety, and depression. ACT was found to have greater effect sizes in post-treatment, particularly with anxiety and depression, when compared to mindfulness-based stress reduction and mindfulness-based CBT (Veehof, Trompetter, Bohlmeijer, & Schreurs, 2016). Due to these results, Veehof et al. suggested placing a greater emphasis on mindfulness in CBT sessions as well as adding components of psychological flexibility. However, many of the alternative mindfulness-based approaches besides ACT had lower methodological quality scores (Veehof et al., 2016). Therefore, it is unknown if ACT is truly superior to other mindfulness-based approaches or if the ACT studies were just executed better (Veehof et al., 2016). Additionally, publication bias was detected in some of the smaller studies lowering the reliability of the results (Veehof et al., 2016). In general, the literature surrounding ACT appears to be mixed and most meta-analytic results demonstrate that ACT is either not as effective as other treatments or is equivalent to other treatments. Therefore, the ability to enhance ACT in some manner remains a viable option.

**CBT and ACT Similarities**

**Cognitions.** Although not as effective as behavioural interventions, cognitive interventions have produced favourable results. More specifically, cognitive interventions are effective in reducing automatic negative thoughts in depression, anxiety, and insomnia
THE EFFECTS OF PREVIOUS CBT ON ACT

(Fernández & Mairal, 2017; Harvey, Dong, Bélanger, & Morin, 2017). Furthermore, Weck, Nagel, Höfling, and Neng (2017) found that cognitive interventions were comparable to exposure therapy in reducing health anxiety. While ACT and CBT both address and provide education in regard to cognitions, the similarity of their perspectives on cognitions is debateable.

Specifically examining the cognitive therapy portion of CBT, Herbert and Forman (2013) challenged the current debate on the efficacy of ACT in comparison to CBT through acknowledging their similarities, particularly with regards to cognitions. Despite originating from different philosophical and theoretical backgrounds, ACT and CBT share a focus on cognitions and an intention to teach cognitive techniques to cope with distressing cognitions (Herbert & Forman, 2013). The difference between these two therapies is simply what is emphasized (Herbert & Forman, 2013). For example, a CBT perspective may view negative thoughts as the cause of behavioural avoidance, whereas an ACT perspective may view an avoidance of uncomfortable thoughts or emotions as the cause of the behaviour (Herbert & Forman, 2013).

Similarly, Leahy (2008) claimed that the differential cognitive aspects between CBT and ACT are not as substantial as it appears to be. Leahy asserted that the cognitive portion of CBT is about identifying reality, whereas the cognitive portion of ACT is about accepting the reality. Furthermore, De Houwer, Barnes-Holmes, and Barnes-Holmes (2016) acknowledged that ACT and CBT should not be mutually exclusive. They stated that in the future an ACT perspective could assist in analyzing cognitive theories, such as helping to distinguish between mental processes and the environmental cues that activate certain mental processes. Herbert and Forman (2013) also suggested a combined use of ACT and CBT to offer a variety of options to clients. Despite the legitimate assertions of Herbert and Forman, Leahy, and De Houwer et al., it should be noted that similarities of ACT and CBT are purely based in academic opinion with no empirical demonstration that ACT and CBT are related.

**Mindfulness.** Leahy (2008) stated that the concept of mindfulness is a similarity between ACT and CBT even though it is erroneously recognized as a distinguishing feature of ACT. He stated that CBT has incorporated mindfulness for a number of years, and that the main difference is that ACT includes mindfulness in its teaching model and CBT does not. In general, mindfulness is defined as existing in the present moment (Blonna, 2010). Mindfulness has been found to have an inverse relationship with depression and anxiety symptoms (Bluth & Eisenlohr-Moul, 2017) and it correlates positively with psychological wellbeing (Carmody & Baer, 2008). Furthermore, mindfulness has been found to enhance intrinsic motivation (Brown, Goodman, Ryan, & Anālayo, 2016). Therefore, an individual who has past experience with mindfulness might have a better ability to engage in therapy than others.

There is a moderate amount of empirical support for mindfulness as an effective treatment. Sizoo and Kuiper (2017) compared mindfulness-based stress reduction (MBSR) and CBT for adults with autism. The results were equivalent for MBSR and CBT with respect to decreases in anxiety and depression symptoms (Sizoo & Kuiper, 2017). However, it should be noted that this study was not a randomized controlled trial and confounding variables, such as medication were not controlled (Sizoo & Kuiper, 2017).

Spears et al. (2017) provided better empirical support for a mindfulness approach to treatment. They conducted a randomized controlled trial with 412 participants who were addicted to smoking and assigned them randomly to a CBT group, mindfulness group, or usual care (UC) group. Overall, the mindfulness group produced results as effective as CBT with regards to anxiety symptoms and self-efficacy, and both the mindfulness group and CBT group
had lower anxiety and higher self-efficacy in comparison to the UC group (Spears et al., 2017).
In summary, both CBT and ACT incorporate cognition and mindfulness interventions in their
therapy, and both cognition work and mindfulness are empirically-based. Therefore, the aspect
that is debateable is the similarity by which cognition and mindfulness interventions are executed
when delivered from an ACT or CBT perspective.

Combinations of CBT and ACT

The similarities between CBT and ACT can be exemplified in hybrid therapies that
highlight main components of ACT. One such component is mindfulness. Dunkley and Brozzo
(2016) reviewed literature comparing CBT and mindfulness-based cognitive therapy (MBCT) for
genital pain in women. Although they stated that more literature was needed on MBCT for that
population, MBCT appeared to be a promising treatment that could be equivalent to CBT.

Supporting this notion, Wong, Ree, and Lee (2016) conducted a randomized controlled
trial to compare CBT with a cognitive emphasis and CBT with a mindfulness emphasis. All
participants received four sessions of CBT and were then randomized into the following groups:
waitlist, mindfulness, and cognitive therapy (CT) (Wong, Ree, & Lee, 2016). The results
demonstrated that the mindfulness and CT groups had significant improvements with regards to
insomnia symptoms and sleep time compared to the waitlist group (Wong et al., 2016). However,
when the mindfulness group and CT group were compared, there were no significant differences
in insomnia symptoms and sleep time (Wong et al., 2016).

Furthermore, an 8-week MBCT program was administered to 10 staff members at a
mental health in-patient hospital (Moorhead et al., 2016). The program consisted of learning
body awareness, mindfulness, and the CBT model. The mindfulness scores of all the participants
increased as well as those measuring internal and external awareness (Moorhead et al., 2016).
The participants’ feedback on the program paralleled the results (Moorhead et al., 2016). Many
of the participants stated that, while working, they were able to identify their own difficulties
more readily and apply mindfulness strategies so that their ability to support their clients was not
compromised (Moorhead et al., 2016).

Although there is a moderate amount of literature regarding MBCT, fewer studies have
actually combined ACT with CBT. Strandskov et al. (2017) conducted a randomized controlled
trial of internet-based, ACT-influenced CBT for eating disorders. There were 92 participants,
many of who had comorbid diagnoses; overall, generalized anxiety disorder was the most
common diagnosis (Strandskov et al., 2017). Strandskov et al. created a program that combined
ACT and CBT; the CBT components consisted of psychoeducation on eating disorders, daily
food journals, and exposure to anxiety-provoking situations. The cognitive perspective of ACT
was adopted, which included cognitive defusion, as well as values identification, and
mindfulness (Strandskov et al., 2017). More participants from the treatment group exhibited
clinically significant improvements on the Eating Disorders Examination Questionnaire
compared to the control group; furthermore, larger effect sizes for knowledge acquisition were
found in the treatment group (Strandskov et al., 2017). Interestingly, there were no significant
changes between the two groups for depression symptoms; however, some of the measurement
tools utilized limited the impact of this study (Strandskov et al., 2017). Strandskov et al.
addressed that there was low internal consistency for the tool used to measure knowledge
acquisition and that the validity of the Eating Disorders Examination Questionnaire was
arguable. In addition, they recognized that the lack of follow-up data made it difficult to
demonstrate the beneficial long-term effects of combining CBT and ACT.
Despite relatively favourable outcomes of amalgamating ACT and CBT, Hallis, Cameli, Dionne, and Knäuper (2016) chose a different approach to blending the two therapies together. Hallis et al. designed a group treatment manual for depression. The manual differed from previous combinations of ACT and CBT because it identified to the participants that they were learning two different therapies (Hallis, Cameli, Dionne, & Knäuper, 2016). Hallis et al. stated that it should be made clear to the participants, which techniques are from which therapy. The most unique aspect of that approach was that it encouraged interchangeable use of both CBT and ACT cognitive techniques (Hallis et al., 2016). Hallis et al. utilized this approach with two middle-aged men who had depression. The case studies demonstrated that the clients chose to use either an ACT or CBT strategy depending on the situation they encountered; for example, when an ACT technique was not working for the client, he would switch to a CBT technique (Hallis et al., 2016). At the 3-month follow-up, both men no longer met the criteria for depression (Hallis et al., 2016). However, regardless of the unique approach to treatment, more influential studies to support the ACT and CBT combined treatment model are needed. In general, combining ACT with CBT has a preliminary basis of empirical evidence. However, empirical support for administering CBT and ACT sequentially is noticeably absent in the literature.

**Learning and Memory**

**Generalization.** Overall, generalization can be broadly defined as a transfer of a skill across various domains of life (Chance, 2014). Chance (2014) stated that generalization could be promoted by offering a variety of options or scenarios when teaching or managing a behaviour. Although he was referring to a more concrete behavioural context, this knowledge could be extrapolated to learning different cognitive techniques. Stimulus generalization occurs when an individual can utilize a learned behaviour in different situations (Chance, 2014). Therefore, an individual could argue that those who have learned CBT skills, such as mindfulness, could transfer that knowledge to learning ACT skills.

In contrast, Robinson, Whitt, and Jones (2017) conducted a series of experiments involving rats and familiarity-based generalization. They found that generalization was enhanced when two familiar stimuli or two new stimuli were presented but not when there were one familiar stimulus and one new stimulus. The fact that a combination of new and familiar stimuli did not enhance generalization could be extended to the notion that those who are familiar with certain components of ACT (i.e., mindfulness and CBT cognition work) may not be able to generalize their skills as effectively as those who are unfamiliar with ACT. However, this could be an oversimplification of Robinson et al.’s results as those were experiments conducted with non-human participants using behavioural techniques, such as classical conditioning to tones and clickers.

**Recognition and memory.** Weiss (2000) stated that when individuals learn, a memory is created. Therefore, when people encounter a similar situation, they might be able to acquire a skill or solution more quickly than the first time the situation was encountered (Weiss, 2000). Lindsay, Paulhus, and Nairne (2008) defined Weiss’s example in less colloquial terms. They discussed transfer-appropriate processing, which is the ability to recall appropriate past information and utilize it in a similar context. Furthermore, transfer-appropriate processing is more likely to occur in environments and emotional states similar to that of the original learning experience (Lindsay, Paulhus, & Nairne, 2008). Therefore, it is possible that individuals who
have received a similar therapy in the past, such as CBT, could remember and utilize the learned information to facilitate the acquisition of other similar therapeutic techniques, such as ACT.

In contrast, the notion of *proactive interference* could negate that possibility. Proactive interference is the occurrence of old information impeding the ability to remember new information (Lindsay et al., 2008). Consequently, old techniques of a previous therapy could impact the ability to learn new therapy techniques. In summary, the concepts of generalization and transfer-appropriate processing support the notion that administering techniques of ACT with participants who have had recent experience with CBT could be beneficial.

**Conclusion**

Overall, CBT and ACT have respectable empirical bases (Butler et al., 2006; Eilenberg et al., 2016; Folke et al., 2012; Vittengl et al., 2007) but both have their limitations; CBT and ACT are no more effective than other therapies (A-Tjak et al., 2015; Barcons et al., 2016; Bluett, Homan, Morrison, Levin, & Twohig, 2014; Cuijpers et al., 2014). More specifically, CBT has been criticized for its approach in challenging negative thoughts (Longmore & Worrell, 2007) and ACT does not have a solid empirical basis as compared to CBT (Hacker et al., 2016).

Regardless of their differing philosophical foundations, both therapies share similar components with respect to psychoeducation surrounding cognitions and mindfulness (Leahy, 2008). Despite having similar empirically-based components and the fact that some components of ACT and CBT have been combined (Moorhead et al., 2016; Strandskov et al., 2017) little research has been conducted on administering ACT with participants who have recent experience with CBT. Therefore, based on current literature, it is unknown if previous experience with CBT would be an asset when acquiring knowledge of ACT skills.

Taking into account the similarities in CBT and ACT, as well as the concepts of generalization and transfer-appropriate processing (Chance, 2014; Lindsay et al., 2008), it is expected that individuals who have previously received a CBT-based program will demonstrate a greater decrease in anxiety and depression symptoms and a greater increase in mindfulness and psychological flexibility than those who have not. The null hypothesis is that there will be no differences in the scores for anxiety and depression, mindfulness, and psychological flexibility between those who have previously received CBT and those who have not.
Chapter III: Method

Setting
Addiction and Mental Health Services – Kingston, Frontenac, Lennox, and Addington (AMHS – KFLA): Vocational Services served as the location for this study. This agency provides employment support for adult individuals who have difficulty with their mental health and are working or seeking employment. AMHS – KFLA: Vocational Services also advocates for clients in the workplace in order to provide them with appropriate workplace accommodations.

Facilitators
A fourth year Behavioural Psychology student co-facilitated the ACT sessions with a vocational rehabilitation specialist who had two years of experience facilitating ACT groups and nine years of experience working at the agency’s vocational services.

Selection Procedures
After the study was approved by the Research Ethics Committee for Behavioural Psychology (REC-P) (Appendix A), agency staff members referred clients to the study if they met the required inclusion and exclusion criteria. Once referred, the clients were screened further to determine if their schedule coordinated with the dates of the ACT sessions.

Consent Forms
Participants. Two consent forms were written for the participants at a Grade 6 reading level and approved by REC-P. The first consent form (Appendix B) was for participants in the 6-week ACT group. This consent form included a description of participation requirements as well as confidentiality procedures. Furthermore, the consent form contained a description of the utilization and storage of participant data and the risks and benefits of participation.

The second consent form (Appendix C) was for participants who agreed to participate in the 2-month follow-up. This consent form included the same information as the first consent form except that it had a different description for participation requirements. The signed consent forms were stored in the participants’ files and will be shredded 10 years after the participants have completed their time with vocational services. Also, electronic copies of the participants’ consent forms were stored in their electronic files at AMHS – KFLA.

Staff. A consent form (Appendix D) was written for staff members whose clients were involved in the study. The consent form was similar to the participant consent forms and outlined confidentiality procedures, particularly the utilization and presentation of data. The signed consent forms will be stored at St. Lawrence College for 10 years, after which time they will be shredded.

Consent to use agency name. A consent form (Appendix E) to use the agency’s name in this study was signed by AMHS – KFLA’s manager of communications and public engagement.

Participants
This study involved eight participants who were 18 years or older. All participants were current clients of AMHS – KFLA: Vocational Services and had difficulty managing their anxiety or depression. Using clinical judgement, the participants’ caseworkers determined the extent of
the difficulties in anxiety or depression symptom management. The participants of this study did not need to have a formal diagnosis of anxiety or depression to participate due to the fact that a formal diagnosis was not necessary to receive services at AMHS – KFLA. The participants were required to only self-identify with anxiety or depression. Furthermore, there was no specified gender criterion due to limited participant eligibility at the agency. The exclusion criterion consisted of those who had received intensive ACT sessions in the past. Eligible participants were assigned to a group based on whether they had previously completed the agency’s CBT-based program or not.

**Previous CBT-based program group (PCBT group).** This group consisted of three participants who completed the agency’s CBT-based vocational rehabilitation program within the last year. There were two male participants in their early 40s and one female participant in her late 50s. The range of time spent in vocational services prior to the study was between seven and 13 months.

**Non-CBT-based program group (NCBT group).** This group consisted of five participants who had not previously attended the agency’s CBT-based vocational rehabilitation program. There were three female participants whose ages ranged from late 20s to late 50s and two male participants whose ages ranged from early 20s to early 30s. The range of time spent in vocational services prior to the study was between one and 13 months. Detailed information on all participants can be found in Appendix F.

**Research Design**

This study was a non-equivalent, control group design. The independent variable was the group ACT sessions. The dependent variables were the anxiety and depression symptoms, mindfulness, and psychological flexibility as measured by the Depression Anxiety Stress Scale 42, Five Facet Mindfulness Questionnaire, Acceptance and Action Questionnaire – II, and the caseworker rating scale. The data were statistically analyzed using a Friedman test and a Wilcoxon Signed Rank test. Between-group comparisons were conducted using percentage of improvement and descriptive statistics, such as mean and standard deviation.

**Apparatus and Materials**

Writing utensils, paper, and handouts of the slideshow presentation were provided for the participants. In addition, ACT exercise sheets (Appendix G) and weekly homework sheets (Appendix H) were given to the participants. Empty duo-tangs were provided for each participant to store the session handouts and homework sheets. A projector and dry erase markers were used in the sessions as well.

**Measures**

**Depression Anxiety Stress Scale 42 (DASS 42).** The DASS 42 (Appendix I) is a 42-item self-report questionnaire that was used to measure depression and anxiety (Lovibond & Lovibond, 1995a). A Likert-type scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time) is used to rate statements in the context of the past week. Due to its dimensional approach as opposed to categorical approach, the DASS 42 is not a diagnostic tool but a tool that measures symptoms (Lovibond & Lovibond, 1995a). The interpretation of the subscale scores and severity levels can be found on the DASS 42 scoring sheet. The DASS 42 has moderate reliability and test-retest reliability (Brown, Chorpita, Korotitsch, & Barlow, 1997). Furthermore, the depression and anxiety subscales demonstrate moderate convergent validity.
with the Beck Depression Inventory and the Beck Anxiety Inventory (Lovibond & Lovibond, 1995b).

Acceptance and Action Questionnaire – II (AAQ-II). The AAQ-II (Appendix J) is a 7-item self-report measure that mainly assesses psychological flexibility (Bond et al., 2011). A Likert-type scale ranging from 1 (never true) to 7 (always true) is used to answer each statement. Lower scores exemplify greater psychological flexibility. The AAQ-II has demonstrated moderate test-retest reliability as well as good predictive validity for psychological well-being (Bond et al., 2011). The AAQ-II has been found to demonstrate good discriminant validity (Bond et al., 2011). In contrast, Wolgast’s (2014) exploratory factor analysis found that the AAQ-II lacked discriminant validity and correlated more with distress factors rather than with acceptance factors.

Five Facet Mindfulness Questionnaire (FFMQ). The FFMQ (Appendix K) is a 39-item self-report questionnaire that is used to measure mindfulness (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). A Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true) is used to rate a series of statements. The statements are based on five components of mindfulness: observing, acting with awareness, describing, non-judging, and non-reacting. These components have been found to correlate with psychological well-being and negatively correlate with psychological symptoms (Baer et al., 2008). The FFMQ subscale scores are calculated by adding the responses for each subscale. The subscale totals can be combined to form a total score. Higher scores equal higher levels of mindfulness.

The FFMQ demonstrates good construct validity (Baer et al., 2008) and moderate external validity (Giovannini et al., 2014; Kantrowitz-Gordon, 2017). This assessment tool also exhibits good reliability (Bohlmeijer, Klooster, Fledderus, Veehof, & Baer, 2011). Interestingly, Gu et al. (2016) examined the factor structure of the FFMQ and found that the observing subscale was not valid when measuring change before and after a mindfulness-based treatment. They suggested excluding the observing subscale when administering pre- and post-tests for mindfulness-based interventions.

Caseworker rating scale. This scale (Appendix L) was a 5-item informal measure created by the student researcher. Each item required caseworkers to rate their client based on their own observations using a Likert-type scale from 1 to 10. The items rated anxiety symptoms, mindfulness, goal setting, and value identification. These items sought to correspond to the participant measures, which assessed anxiety and depression symptoms, mindfulness, and psychological flexibility.

Participant feedback form. This form (Appendix M) was a modified version of AMHS – KFLA’s standard feedback form. Modifications were made in order to get more detailed feedback from the participants and to make the survey more applicable to ACT. The form consisted of four open-ended questions and three questions that were answered on a Likert-type scale from 1 to 10. The questions inquired about the strengths and weaknesses of the group and the usefulness of ACT.

Follow-up questionnaire. This questionnaire (Appendix N) was created by the student researcher and inquired about changes in the participants’ daily lives since the group concluded. The questionnaire consisted of 10 statements with check-mark boxes. Statements were checked-off if they were applicable to the participant. Additionally, this measure included one question that was answered on a Likert-type scale from 1 (not at all) to 10 (all the time). This questionnaire was provided in order to gather information on confounding variables that may have impacted the follow-up assessment results.
**Procedures**

**Informed consent.** Prior to commencing the groups, informed consent was obtained from each participant and their caseworker. In order to participate in the follow-up, informed consent was obtained from the participants again.

**Participants.** For the ACT group consent form, a verbal overview of the consent form was delivered individually to each participant in the co-facilitator’s office. The verbal overview emphasized the participant’s roles and responsibilities in the study as well as the right to withdraw from the study. Each participant was given a sufficient amount of time to read the consent form independently, and given a calendar with the dates and times of the ACT sessions. Due to the fact that some of the participants were concluding their time with vocational services, a permission form (Appendix O) to contact the participants for a 2-month follow-up was given to them at the final group session. For the follow-up consent form, a verbal overview was delivered to the participants altogether in the same conference room where the ACT sessions were held. The verbal overview emphasized the same aspects as the verbal overview for the ACT group consent form.

**Staff.** There were four caseworkers who participated in this study: one caseworker for Participant 3, one caseworker for Participant 5 and Participant 6, one caseworker for Participant 2, and one caseworker for Participant 1, Participant 4, Participant 7, and Participant 8. A verbal overview of the consent form was given individually to each participant’s caseworker in their own office. The verbal overview emphasized the utilization and presentation of data as well as the right to withdraw from the study. Each caseworker was given a sufficient amount of time to independently read the consent form.

**Data collection.** All participants completed the measures in the same conference room in which the ACT sessions were conducted.

**Pre-test.** At the beginning of the first ACT session, the pre-test measures were completed. The DASS 42 was administered first followed by the FFMQ and then the AAQ-II. All participants completed the measures independently. The participants’ caseworkers completed the caseworker rating scale in their own offices within a day of the first ACT session.

**Exceptions.** The pre-test measures were re-administered to Participant 6 from the NCBT group due to incorrect completion of the assessments. This re-administration occurred between Sessions 3 and 4 of the ACT group.

**Post-test.** At the beginning of the last ACT session, participants were given the participant feedback form to complete independently. At the end of the last ACT session, the post-test measures were administered in the same order as the pre-test measures. Similar to the pre-test measure, the participants’ caseworkers completed the caseworker rating scale in their own offices within a day of the last ACT session.

**Exceptions.** Participant 3 completed the post-test measures approximately a week after all the other participants completed the post-test measures due to scheduling conflicts. In addition, the caseworker rating scale was the only post-test measure data collected for Participant 2.

**2-month follow-up.** At the beginning of the follow-up meeting, the participants were given the follow-up questionnaire to complete. After the questionnaire was completed, the follow-up measures were administered in the same order as the pre- and post-test measures and completed independently. The caseworker rating scale was the only measure not re-administered at follow-up due to the fact that some participants had exited vocational services before the follow-up and there were changes in employee positions at AMHS – KFLA: Vocational Services.
Exceptions. Participant 6 and Participant 8 completed the follow-up measures in a different conference room. Participant 3 and Participant 5 completed the follow-up measures two days later than the other participants due to scheduling conflicts. Additionally, follow-up data were unable to be collected for Participant 2 and Participant 4.

ACT sessions.

Setting. Both facilitators conducted all the ACT sessions, which were held in a conference room that contained a white board, five rectangular tables, and seven arm-chairs. The participants in each group sat at the tables in a semi-circle facing the facilitators. All groups were held in the same room with the exception of Session 2. Session 2 for the PCBT group was held in a similar conference room that contained four rectangular tables, a white board, and a flip chart. The facilitators used a projector that plugged into a laptop to display the slideshow presentation on the white board.

Session content. The sessions were a modified version of the guidelines contained in Rouleau and Jobin’s (2014) ACT group counselling manual. Some of the session topics and readings were rearranged (e.g., the bull’s eye activity was introduced earlier than what was outlined in the manual) and some of the activities were excluded to accommodate the shortened length of the sessions. Furthermore, the ACT matrix activity was added as well as an awareness chart activity, and supplementary information from Harris’ (2007) *The Happiness Trap: Stop Struggling and Start Living*. Permission to use and modify the manual was granted by the principal author.

Each group received two ACT sessions a week for six weeks. Every session was approximately 1.5 hours long and consisted of a mindfulness exercise at the beginning and end of every session, a homework review or check-in, and psychoeducation. Additionally, following Session 2, the ACT hexaflex was reviewed and points were filled in that corresponded with the material. As outlined in Rouleau and Jobin’s (2014) manual, all homework readings were excerpts from Harris’ (2007) book *The Happiness Trap: Stop Struggling and Start Living* with the exception of the reading given in Session 1, which was the first chapter of Forsyth and Eifert’s (2007) *Mindfulness and Acceptance Workbook for Anxiety*.

Session 1. The concept of mindfulness and the meaning of acceptance and commitment was introduced.

Session 2. The ACT hexaflex was introduced and a matrix activity was conducted.

Session 3. A values identification exercise was completed, and a discussion surrounding the definition of values was conducted.

Session 4. The discussion on values continued from the previous session. It mainly consisted of an activity that involved identifying values in various domains of the participants’ lives.

Session 5. Goals and committed action were discussed. The discussion primarily focused on identifying a value, creating a goal surrounding that value, and deconstructing the goal into objectives.

Session 6. The concept of cognitive defusion was introduced, which is a technique used to decrease emotional distress surrounding negative thoughts. The introduction consisted of a definition of thoughts and the difference between fusion and defusion.

Session 7. The discussion of cognitive defusion continued. More specifically, the concept of workable versus unworkable thoughts were discussed and defusion techniques were introduced in this session.
Session 8. The concept of cognitive defusion was continued by discussing pervasive thoughts. An awareness chart was introduced, which deconstructed a situation into thoughts, emotions, and behaviours.

Session 9. An expanded awareness chart was introduced, which included identifying a defusion technique and a new-value directed behaviour.

Session 10. The last topic of ACT was introduced which was the observing-self. It focused on defining the observing-self through the use of metaphors.

Sessions 11 and 12. The six processes of ACT were reviewed and the participants relayed what they had learned in previous sessions. Further details of all sessions are outlined in Appendix P.

Individual ACT sessions. If a participant was unable to attend an ACT session, an individual session was scheduled so that the participant could learn the material they missed. These sessions were conducted in the same conference room that the ACT groups were held. Four individual sessions had to be provided to Participant 3 in the PCBT group to account for missing Sessions 3, 4, 6, 9, and 12. One individual session had to be provided to Participant 2 in the PCBT group to account for missing Session 8. Two individual sessions had to be conducted for Participant 4 in the NCBT group to account for missing Sessions 3 and 8. One individual session was conducted for Participant 7 in the NCBT group to account for missing Session 10. Overall, six individual sessions were scheduled for the PCBT group, and three individual sessions were scheduled for the NCBT group.
Chapter IV: Results

Statistical Analysis

A Friedman test was used to determine the significance of the results from pre-test, post-test, and follow-up for the DASS 42, FFMQ, and AAQ-II. A Wilcoxon Signed Rank test was used to determine which assessment period produced significant results (i.e., from pre-test to post-test, from post-test to follow-up, or from pre-test to follow-up). The Wilcoxon Signed Rank test was used on the data from the caseworker rating scale because this measure was administered only at pre-test and post-test.

Originally, the use of a t-test was planned; however, due to the small number of participants, a Friedman test and Wilcoxon Signed Rank test were chosen instead. The participant data were assessed together and not analyzed by group. This was due to the fact that the number of participants in each group was so small that it did not fit the assumptions of any statistical test. For all measures, a one-tailed test with a significance level of 0.05 was chosen. Appendix Q displays the chi-square values and $p$-values for all measures that were analyzed using the Friedman test as well as the $z$-scores and $p$-values for all measures that were analyzed using the Wilcoxon Signed Rank test.

**DASS 42.** A significant decrease occurred in the depression subscale scores from pre-test to post-test ($z = -2.03, p = 0.02$) and from pre-test to follow-up ($z = -2.20, p = 0.01$). Similarly, the scores for the stress subscale significantly decreased from pre-test to post-test ($z = -2.37, p = 0.01$) and from pre-test to follow-up ($z = -2.21, p = 0.01$). In contrast, the scores for the anxiety subscale significantly decreased from post-test to follow-up ($z = -1.84, p = 0.03$) but were not significant from pre-test to post-test ($z = -1.69, p = 0.05$) and from pre-test to follow-up ($z = -1.57, p = 0.06$).

**FFMQ.** All results from pre-test, post-test, and follow-up were not significant for the observing subscale ($\chi^2 = 0.74, p = 0.35$), describing subscale ($\chi^2 = 4.33, p = 0.06$), and awareness subscale ($\chi^2 = 0.33, p = 0.42$). However, there was a significant increase ($z = -1.78, p = 0.04$) in the non-judging subscale from pre-test to follow-up. Furthermore, there was a significant increase in the non-reacting subscale from pre-test to post-test ($z = -2.37, p = 0.01$) and from pre-test to follow-up ($z = -2.20, p = 0.01$). Overall, the results of the total score produced a significant increase only from pre-test to follow-up ($z = -2.20, p = 0.01$).

**AAQ-II.** The psychological flexibility scores were not significant ($\chi^2 = 3.74, p = 0.08$) from pre-test to post-test, post-test to follow-up, or pre-test to follow-up.

**Caseworker rating scale.** The anxiety symptoms subscale demonstrated a significant decrease ($z = -2.58, p = 0.01$) from pre-test to post-test. Furthermore, there was a significant increase in the mindfulness subscale ($z = -2.46, p = 0.01$), the goal setting subscale ($z = -2.56, p = 0.01$), and the values identification subscale ($z = -2.54, p = 0.01$).

Descriptive Statistical Analysis

For both groups, the mean, standard deviation, and percentage of improvement were calculated for the DASS 42, FFMQ, AAQ-II, and caseworker rating scale. For the participant feedback form, only the mean was calculated for each group as it was administered at only post-test. Additionally, the mean was calculated for the follow-up questionnaire due to the fact that this measure was administered only at follow-up. The percentages of improvement for all
measures are displayed in Appendix Q. Additionally, in order to clearly illustrate the data outlined in the tables, graphs for all measures can be found in Appendix R.

**DASS 42.** The mean group scores and standard deviations for the DASS 42 are displayed in Table 1.

**PCBT group.** From pre- to post-test, there was an 18.07% decrease in the stress subscale mean score. The mean score decreased by a further 25.71% from post-test to follow-up. A similar decreasing pattern was reflected in the standard deviation for the stress subscale from pre-test (SD = 5.59) to post-test (SD = 0.50). This indicates that the individual participant scores for the stress subscale were less varied at post-test. In addition, the mean depression subscale score decreased by 1.06% between pre- and post-test and continued to decrease by 19.51% between post-test and follow-up. Furthermore, the standard deviation decreased from pre-test (SD = 7.28) to post-test (SD = 0.50), indicating that the individual participant scores for the depression subscale varied less in post-test than in pre-test. Conversely, the mean score for the anxiety subscale increased by 106.49% from pre- to post-test. However, the mean score decreased by 14.29% from post-test to follow-up.

When examining the mean scores with the categorical severity levels of the DASS 42, only the mean depression and stress subscale scores demonstrated improvements, as the mean anxiety subscale score stayed within the normal range at pre-test, post-test, and follow-up. The mean depression score did not categorically change from pre- to post-test; however, from post-test to follow-up, it lowered from the severe category to the moderate category. The mean stress score changed from the moderate category to the mild category between pre- and post-test and lowered into the normal category at follow-up.

**NCBT group.** All of the mean scores for each subscale decreased from pre- to post-test and from post-test to follow-up. The depression subscale decreased by 59.74% from pre- to post-test and decreased an additional 11.29% from post-test to follow-up. Furthermore, there was a 54.17% decrease in the mean score for the stress subscale from pre-test to post-test, and it further decreased by 25.71% from post-test to follow-up. Similar to the PCBT group, the subscale that improved the least from pre- to post-test was the anxiety subscale, which improved by 52.73%; despite this, the mean score continued to decrease by an additional 63.94% from post-test to follow-up. Furthermore, the standard deviation for the anxiety subscale decreased from post-test (SD = 6.59) to follow-up (SD = 1.30). This demonstrates that there was more variance in individual participant scores at post-test than at the 2-month follow-up.

When examining the mean scores with the categorical severity levels of the DASS 42, all subscale scores improved. From pre- to post-test, the mean depression score lowered from the moderate category to the normal category and continued to be within the normal category at follow-up. From pre- to post-test, the mean anxiety score decreased from the extremely severe category to the moderate category and lowered to the normal category at follow-up. The mean stress score decreased from the moderate category to normal category from pre- to post-test; the mean score continued to be within the normal category at follow-up. Appendix Q demonstrates the contrast of severity levels between the PCBT group and NCBT group.

Overall, from pre- to post-test, post-test to follow-up, and pre-test to follow-up, the NCBT group had greater percentages of improvement and mean scores than the PCBT group for all subscales and lower mean scores for the depression and stress subscales; however, the PCBT group demonstrated a greater percentage of improvement from post-test to follow-up in the depression subscale and a lower mean score in the anxiety subscale from pre-test to post-test.
Table 1

*Group Mean and Standard Deviation Scores for the DASS 42*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCBT (n = 3)</td>
<td>NCBT (n = 5)</td>
<td>PCBT (n = 2)</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>20.72</td>
<td>15.40</td>
<td>20.50</td>
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<tr>
<td>SD</td>
<td>7.28</td>
<td>5.92</td>
<td>0.50</td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.39</td>
<td>22.00</td>
<td>7.00</td>
</tr>
<tr>
<td>SD</td>
<td>1.62</td>
<td>9.27</td>
<td>5.00</td>
</tr>
<tr>
<td>Stress</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>M</td>
<td>21.36</td>
<td>19.20</td>
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</tr>
<tr>
<td>SD</td>
<td>5.59</td>
<td>7.68</td>
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</tbody>
</table>

**FFMQ.** The mean group scores and standard deviations for the FFMQ can be found in Table 2.

**PCBT group.**

*Non-reacting subscale.* From pre- to post-test, the mean score increased by 18.75%. In contrast, from post-test to follow-up, the mean score decreased by 2.63%, indicating that the ability to not allow emotions to dictate behaviour increased at post-test but decreased from post-test to follow-up.

*Observing subscale.* Similar to the non-reacting subscale, the mean score improved by 5.69% from pre- to post-test but decreased by 4.84% from post-test to follow-up. This indicates that the ability to notice sensations through the five senses increased at post-test but decreased from post-test to follow-up.

*Awareness subscale.* From pre- to post-test, the mean score decreased by 7.57% and increased by 1.89% from post-test to follow-up. This indicates that the ability to focus in the present moment decreased between pre- and post-test but increased from post-test to follow-up.

*Describing subscale.* The mean score increased by 3.16% from pre- to post-test and further increased by 20.00% from post-test to follow-up. This indicates that the ability to express emotions and feelings increased from pre- to post-test and from post-test to follow-up.

*Non-judging subscale.* The mean score increased by 9.26% and continued to increase by 15.25% from post-test to follow-up. This demonstrates that negative self-judgements decreased from pre- to post-test and post-test to follow-up.

Overall, from pre-test to follow-up, there was a 10.74% increase in the PCBT group’s total mean score. Interestingly, when examining the mean scores, and not the amount of improvement, the observing subscale had the highest score (M = 31.00) at post-test and the non-judging subscale had the highest score at follow-up (M = 34.00).

**NCBT group.**

*Non-reacting subscale.* Similar to the PCBT group, from pre- to post-test, the mean score increased by 51.28%. Contrary to the PCBT group, the mean score for the non-reacting subscale
increased by 20.76% from post-test to follow-up. This indicates that the ability to not allow emotions to dictate behaviour increased from pre- to post-test and from post-test to follow-up.

**Observing subscale.** The mean score increased by 16.54%, and in contrast to the PCBT group, it further increased by 1.35% between post-test and follow-up. This indicates that the ability to notice sensations through the five senses increased from pre- to post-test and from post-test to follow-up.

**Non-judging subscale.** There was an increase of 38.26% in mean score from pre- to post-test, which further increased by 15.57% from post-test to follow-up. This demonstrates that negative self-judgements decreased from pre- to post-test and post-test to follow-up.

**Awareness subscale.** In contrast to the PCBT group, the mean score for this subscale improved by 26.55% from pre- to post-test and continued to improve by 15.38% at follow-up. This indicates that the ability to focus in the present moment increased from pre- to post-test and from post-test to follow-up.

**Describing subscale.** Similar to the PCBT group, the mean score improved by 10.08% from pre-test to post-test and further improved by 13.56% from post-test to follow-up. This indicates that the ability to express emotions and feelings increased from pre- to post-test and from post-test to follow-up.

When examining the highest mean scores, the non-judging subscale had the highest score ($M = 31.80$) at post-test and follow-up. Overall, there was a 42.79% increase in the total mean score from pre-test to follow-up.

From pre- to post-test, post-test to follow-up, and pre-test to follow-up, the NCBT group obtained greater percentages of improvement in all subscales with the exception of the describing subscale from post-test to follow-up. Furthermore, the NCBT group, as compared to the PCBT group, exhibited higher mean scores at post-test and follow-up in all subscales, with the exception of the mean score for the observing subscale at post-test.
Table 2

**Group Mean and Standard Deviation Scores for the FFMQ**

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pre-test</th>
<th></th>
<th>Post-test</th>
<th></th>
<th>Follow-up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCBT</td>
<td>NCBT</td>
<td>PCBT</td>
<td>NCBT</td>
<td>PCBT</td>
<td>NCBT</td>
</tr>
<tr>
<td></td>
<td>(n = 3)</td>
<td>(n = 5)</td>
<td>(n = 2)</td>
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<td></td>
<td>M</td>
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<td>31.00</td>
<td>29.60</td>
<td>29.50</td>
</tr>
<tr>
<td></td>
<td>SD</td>
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<td>4.92</td>
<td>2.00</td>
<td>1.74</td>
<td>2.50</td>
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<tr>
<td>Describing</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
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<td>22.50</td>
<td>28.40</td>
<td>27.00</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.87</td>
<td>6.40</td>
<td>5.50</td>
<td>3.56</td>
<td>5.00</td>
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<tr>
<td>Awareness</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
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<td>26.50</td>
<td>28.60</td>
<td>27.00</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>7.04</td>
<td>8.31</td>
<td>6.50</td>
<td>5.35</td>
<td>5.00</td>
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<tr>
<td>Non-judging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
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<td>29.50</td>
<td>31.80</td>
<td>34.00</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>5.72</td>
<td>9.42</td>
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<td>3.00</td>
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<tr>
<td>Non-reacting</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
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<td>19.00</td>
<td>23.60</td>
<td>18.50</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>3.74</td>
<td>2.15</td>
<td>0.00</td>
<td>3.98</td>
<td>1.50</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>122.81</td>
<td>112.40</td>
<td>128.50</td>
<td>142.00</td>
<td>136.00</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>3.54</td>
<td>25.19</td>
<td>2.50</td>
<td>12.68</td>
<td>8.00</td>
</tr>
</tbody>
</table>

**AAQ-II.** The mean group scores and standard deviations for the AAQ-II are displayed in Table 3.

**PCBT group.** There was a decrease of 0.52% in the mean score from pre- to post-test, which indicates that there was only a slight increase in psychological flexibility. However, the mean score further decreased by 7.69% from post-test to follow-up. Interestingly, despite the small percentage of improvement, the standard deviation decreased from pre-test ($SD = 4.50$) to post-test ($SD = 0.50$) indicating that the individual participant scores varied more at pre-test than at post-test.

**NCBT group.** The mean score decreased by 40.00% from pre- to post-test and further decreased by 15.40% at follow-up, which indicates that psychological flexibility increased. Similar to the PCBT group, the standard deviation decreased from pre-test ($SD = 10.97$) to post-test ($SD = 4.83$). Overall, the NCBT group had greater percentages of improvement and lower mean scores than the PCBT group.
Table 3  
Group Mean and Standard Deviation Scores for the AAQ-II

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pre-test</th>
<th></th>
<th>Post-test</th>
<th></th>
<th>Follow-up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>PCBT</td>
<td>32.67</td>
<td>4.50</td>
<td>32.50</td>
<td>0.50</td>
<td>30.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(n = 3)</td>
<td></td>
<td>(n = 2)</td>
<td></td>
<td>(n = 2)</td>
<td></td>
</tr>
<tr>
<td>NCBT</td>
<td>33.00</td>
<td>10.97</td>
<td>19.80</td>
<td>4.83</td>
<td>16.75</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>(n = 5)</td>
<td></td>
<td>(n = 5)</td>
<td></td>
<td>(n = 4)</td>
<td>(n = 4)</td>
</tr>
</tbody>
</table>

Caseworker rating scale.

**PCBT group.** All scores on the caseworker rating scale improved between pre- and post-test. In particular, the mean score for mindfulness demonstrated the largest improvement by 58.25%. The second greatest increase occurred in the mean of the goal setting score, which increased by 56.96%. Although some improvement was seen in the anxiety symptoms and values identification subscales, these percentages were smaller at 38.83% and 36.97% respectively. Interestingly, when viewing the mean scores at post-test, the mean values identification score was the highest (M = 8.67) and the mean mindfulness score was the lowest (M = 6.33). This indicates that, despite a large improvement, the mean mindfulness score was still low in comparison to the other subscale scores for the caseworker rating scale.

**NCBT group.** Analogous with the PCBT group, all the mean scores improved from pre-to post-test. In contrast to the PCBT group, the mean for the values identification score obtained an increase of 156.25%. Comparably, the mean score for mindfulness increased by 116.67%. This indicates that there was a larger difference in the values identification and mindfulness mean scores, in comparison to the PCBT group, between pre- and post-test. Similar to the PCBT group, the subscales that improved the least from pre- to post-test were goal setting, which increased by 105.00%, and anxiety symptoms, which increased by 38.46%.

Overall, the NCBT group demonstrated greater improvements in the mindfulness, goal setting, and values identification subscales as well as higher mean scores in the mindfulness and goal setting subscales than the PCBT group at post-test. However, the PCBT group had a higher percentage of improvement and lower mean score for anxiety symptoms as well as a higher mean score for values identification at post-test. The mean group scores and standard deviations for the caseworker rating scale can be found in Table 4.
Table 4

*Group Mean and Standard Deviation Scores for the Caseworker Rating Scale*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCBT</td>
<td>NCBT</td>
</tr>
<tr>
<td></td>
<td>((n=3))</td>
<td>((n=5))</td>
</tr>
<tr>
<td>Anxiety Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(M)</td>
<td>6.00</td>
<td>7.80</td>
</tr>
<tr>
<td>(SD)</td>
<td>0.82</td>
<td>0.98</td>
</tr>
<tr>
<td>Mindfulness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(M)</td>
<td>4.00</td>
<td>3.60</td>
</tr>
<tr>
<td>(SD)</td>
<td>2.16</td>
<td>0.49</td>
</tr>
<tr>
<td>Goal Setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(M)</td>
<td>4.67</td>
<td>4.00</td>
</tr>
<tr>
<td>(SD)</td>
<td>1.25</td>
<td>1.26</td>
</tr>
<tr>
<td>Values Identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(M)</td>
<td>6.33</td>
<td>3.20</td>
</tr>
<tr>
<td>(SD)</td>
<td>3.09</td>
<td>0.75</td>
</tr>
</tbody>
</table>

**Participant feedback form.**

*PCBT group.* For the usefulness of the ACT skills learned, the mean response was 9.50 out of 10. The mean response for the participants’ knowledge on ACT was 7.50 out of 10. Additionally, the mean response for the ACT sessions overall was 9 out of 10.

*NCBT group.* The mean response for the usefulness of the ACT skills learned was 8.40 out of 10. For their knowledge surrounding ACT the mean response was 7.40 out of 10. The mean response for the ACT sessions overall was 8 out of 10. Overall, the NCBT group had lower mean responses in all of the categories when compared to the PCBT group. Appendix R displays the mean responses from each group.

**Follow-up questionnaire.**

*PCBT group.* After the ACT group concluded, 50% of the participants continued with individual counselling and had also experienced a major life change. The mean response for the continuing use of ACT skills since the group concluded was 5 out of 10.

*NCBT group.* After concluding the ACT group, 25% of the participants had changed their medication and 25% had experienced a major loss. Furthermore, 75% of the participants had experienced a major life change and 25% had experienced a crisis situation or traumatic event. Additionally, 50% reported that a loved one had experienced a crisis situation or traumatic event and 25% reported that a loved one had received concerning news about their health. For the continuing use of ACT skills since the group ended, the mean response on the rating scale was 8.25 out of 10. Appendix R displays the percentage of participants that reported changes in their routine as well as the mean responses for the usage of ACT skills.
Chapter V: Discussion

This study examined the effects of previous CBT on ACT. When compared to the PCBT group, the NCBT group exhibited greater percentages of improvement and more favourable mean scores for depression and anxiety symptoms as well as mindfulness and psychological flexibility. These results were contrary to the hypothesis, which expected that the PCBT group would have greater improvements in depression and anxiety symptoms, mindfulness, and psychological flexibility. However, the PCBT group still benefitted from ACT.

Results in the Context of the Current Literature

Previous CBT and ACT. There was no literature directly examining the effects of previous CBT on ACT, but there were a small portion of studies that combined CBT and ACT. Strandskov et al. (2017) administered a hybrid of ACT and CBT, and Hallis et al. (2016) administered ACT and CBT at the same time. The current study used different methods of introducing CBT and ACT than what was used in the studies of Strandskov et al. and Hallis et al. Consequently, it is difficult to conclude that the current results legitimately contradict the literature regarding combinations of CBT and ACT. When the differences between the studies of Strandskov et al., Hallis et al., and the current one are examined, an accurate conclusion may be that the sequential administration of CBT and ACT decreased the benefits of ACT in this study.

Furthermore, some of the results suggest that ACT with previous CBT produces harmful effects. For the PCBT group, the mean awareness score for the FFMQ decreased from pre-test to follow-up, and the mean anxiety score for the DASS 42 increased from pre-test to follow-up. Interestingly, Finnes et al. (2017) found an adverse effect when combining ACT with a work dialogue intervention. They found that the participants’ work absences increased. Taking this information into account, perhaps combining ACT with other therapies produces negative effects; however, that conclusion may be too simplistic. Despite the increase in the PCBT group’s anxiety, they had the lowest mean anxiety score at pre-test and post-test for the DASS 42. Furthermore, they had a slightly greater percentage of improvement and lower mean score for anxiety symptoms on the caseworker rating scale at pre-test and post-test. These discrepancies between the percentages of improvement and mean scores for the anxiety subscales could be attributed to four possible circumstances: the PCBT group was more self-aware of their anxiety at post-test, the PCBT group’s caseworkers underestimated the participants’ anxiety at pre-test and post-test, the caseworkers’ knowledge of the study influenced their answers, or ACT has negative effects on those who do not have high anxiety.

Although the NCBT group achieved more beneficial scores overall, the PCBT group still managed to achieve more favourable scores in some subscales. The PCBT group had greater percentages of improvement on the DASS 42 for the depression subscale and the FFMQ for the describing subscale from post-test to follow-up. Interestingly, this indicates that the PCBT group had a greater decrease in their depression symptoms and a greater increase in their ability to describe their emotions from post-test to follow-up. It could be concluded that previous CBT allows for more positive long-term effects with respect to depression and describing emotions. However, when compared to the PCBT group, the NCBT group obtained lower mean scores in the depression subscale and higher mean scores in the describing subscale at post-test and follow-up, indicating that having no prior CBT is still more beneficial than having prior exposure to CBT. Despite the NCBT group demonstrating greater improvements, the PCBT group still improved from pre-test to follow-up in almost all of the measures. Therefore, it can be concluded
that ACT is relatively beneficial for individuals who have previous experience with CBT but not as beneficial in comparison to individuals who have not been recently exposed to CBT.

Overall, there are two possible conclusions that can be made about previous CBT and ACT. First, previous CBT may decrease the benefits of ACT. More specifically, a time delay between administering CBT and ACT may decrease the benefits of ACT. For the participants of the PCBT group, the minimum time between the administration of CBT and the administration of ACT was two months. Lally, van Jaarsveld, Potts, and Wardle (2010) found that a behaviour can become habitual between 18 and 254 days. Therefore, it is possible that utilizing CBT strategies had become a habitual behaviour for the PCBT group, which inhibited their success in ACT. However, it is unknown if sequential delivery of CBT and ACT would exhibit the same results as this study. Second, ACT with previous CBT may have less beneficial effects on individuals who have low anxiety. This conclusion may be too presumptuous as none of the literature reviewed supports this claim; however, the mean anxiety score for the PCBT group increased from pre-test to follow-up but was still lower than the mean score of the NCBT group at both pre- and post-test. Therefore, these results are enough to at least consider the possibility that ACT with previous CBT may be less beneficial for individuals with low anxiety.

**Learning and memory.** The results of this study mainly contrast the concepts of transfer-appropriate processing (Lindsay et al., 2008) and generalization (Chance, 2014) that were discussed in the literature. Perhaps utilizing these concepts to justify the hypothesis was an extrapolation that was too simplistic. Hypothesizing that transfer-appropriate processing and generalization would allow for the PCBT group to have greater percentages of improvement and more favourable mean scores than the NCBT group was based on two assumptions. First, it was assumed that the ability to excel at understanding a skill would lead to more frequent application of the skill. Second, it was assumed that the ability to understand a therapeutic strategy meant that the strategy would benefit the individual. The participant feedback form and follow-up questionnaire results made it apparent that these assumptions were incorrect. The PCBT group rated the usefulness of the ACT skills, their knowledge on ACT, and their overall impression of the ACT sessions higher than the NCBT group. However, at follow-up, the PCBT group rated their utilization of the ACT skills lower than the NCBT group.

The PCBT group’s results supported the concepts of transfer-appropriate processing and generalization but not in the manner that was expected. While the mean score for the PCBT group on understanding and the importance of learning ACT skills were greater than the NCBT group, the latter applied the skills more frequently. The PCBT group’s lower mean score for the application of skills is supported by the concept of proactive interference (Lindsay et al., 2008), which was discussed in the literature. It is possible that the PCBT group reverted back to CBT techniques to cope with anxiety and depression after the group sessions concluded. However, this could be an inaccurate conclusion due to the fact that the PCBT group did not have as many changes in their daily routine at follow-up as did the NCBT group; consequently, the PCBT group may not have had to use the ACT skills as often as the NCBT group. Therefore, it can be concluded that these results did not necessarily contradict the concepts of transfer-appropriate processing and generalization but challenged the extent to which an individual’s mental health can improve based on those concepts.

**Benefits of ACT.** Although this study sought to examine the effects of previous CBT on ACT, it is still relevant to acknowledge the impact that ACT had on the participants in general. For the DASS 42, the depression and stress subscale scores from pre- to post-test and from pre-test to follow-up were significant. These results were also found in the ACT literature (Arch &
Mitchell, 2016; Finnes et al., 2017; Folke et al., 2012; Gumley et al., 2017; Jansen & Morris, 2017; Veehof et al., 2016). The depression and stress subscale scores were non-significant from post-test to follow-up, which is similar to Gumley et al.’s (2017) results. Interestingly, at the 10-month follow-up for ACT, Gumley et al. found that the decrease in the depression scores was no longer significant. However, concluding that ACT does not have beneficial long-term effects based on the results of this study and those of Gumley et al. would be an overgeneralization. The anxiety subscale scores were significant only from post-test to follow-up, which is contrary to the literature surrounding ACT (Arch & Mitchell, 2016; Eilenberg et al., 2016; Finnes et al., 2017; Harvey, Henricksen, Bimler, & Dickson, 2017; Jansen & Morris, 2017; Veehof et al., 2016). The primary possibility for this discrepancy may be the fact that the anxiety subscale scores for the PCBT group increased. Overall, the DASS 42 results suggest that decreases in stress and depression are immediate benefits of ACT and decreases in anxiety are the long-term benefits of ACT. However, these results are in contrast to the ACT literature.

Mixed conclusions can be made about the impact ACT has on mindfulness. The one aspect in mindfulness that ACT appeared to produce immediate effects for was the non-reacting subscale scores, which were significant from pre-test to post-test and from post-test to follow-up. Other results suggest that ACT could have long-term effects on mindfulness due to the fact that the non-judging subscale score and total score were significant only from pre-test to follow-up. However, the number of FFMQ subscale scores that were not significant cannot be disregarded. The scores of the observing, awareness, and describing subscales were not significant. Three possible conclusions can be made based on those non-significant results: the method in which ACT was delivered in this study did not impact certain qualities of mindfulness or there are flaws in the validity of the FFMQ. Gu et al. (2016) stated that the observing subscale was not valid, and they suggested removing the subscale from the FFMQ when measuring pre- and post-test results for mindfulness-based interventions. However, Gu et al.’s conclusions do not account for the lack of significance in the awareness and describing subscale scores. Therefore, based on the current study’s results, it appears that ACT has a significant effect on the non-reacting and non-judging components of mindfulness but not on any other components of mindfulness.

ACT may have visible effects on participants because all subscale scores for the caseworker rating scale were significant from pre- to post-test. However, the data supporting this conclusion is not objective. More specifically, the caseworker rating scale data were founded in professional judgement with caseworkers who were aware of the hypothesis and intentions of this study. Therefore, it is difficult to conclude with certainty that ACT has visibly beneficial effects on participants. The most unexpected result was the non-significance of the psychological flexibility scores, which contradicted many results in the literature surrounding ACT (Arch & Mitchell, 2016; Gumley et al., 2017; Jansen & Morris, 2017). There are three possible reasons for this: six weeks of ACT was not a sufficient amount of time to promote psychological flexibility, ACT does not address psychological flexibility as effectively as previously thought, or the AAQ-II does not accurately measure psychological flexibility. There is more empirical evidence for the latter as Wolgast (2014) argued that the AAQ-II does not exemplify good discriminant validity, and the items are correlated more to distress factors rather than acceptance factors.

Based on the results of this study, there are various conclusions that can be made: ACT seems to have beneficial short-term effects on depression and stress, ACT has beneficial long-term effects on anxiety, and ACT increases the non-judging and non-reacting components of mindfulness.
Contribution to the Behavioural Psychology Field

Strengths.

Environment. The ACT sessions were held at AMHS – KFLA: Vocational Services, which was a familiar setting for all the participants. Therefore, it reduced the amount of anxiety some of the participants may have felt during the first ACT session allowing for more accurate pre-test data. Furthermore, the pre-test, post-test, and most of the follow-up measures were completed in the same conference room that the ACT sessions were held in, which eliminated the confounding variable of a participant’s anxiety increasing due to a change in setting. The self-report measures were also administered in the same order for pre-test, post-test, and follow-up in an attempt to standardize the testing environment and delivery. Lastly, individual sessions were offered to the participants if they missed a group session; therefore, every participant received all of the ACT session information.

Participants. All the participants had difficulties with anxiety or depression allowing for a more homogenous group of participants.

Limitations.

Group factors. The primary limitation for this study was the small sample size, particularly the uneven number of participants in each group. Furthermore, the groups were not created using random sampling or assignment, which impacts the ability for this sample to be representative of the population. There was also a lack of specificity in the participant inclusion criteria with regards to diagnosis, gender, and past psychotherapy experiences due to the eclectic population that the agency served. This lack of variable control makes it difficult to generalize these results to all genders and clients with a diagnosis of anxiety or depression. Additionally, the lack of control over the participants’ previous psychotherapy experiences does not allow for a valid conclusion that previous CBT inhibits the benefits of ACT. Confounding variables were present in this study, such as a lack of control over the NCBT group’s previous psychotherapy experiences or the CBT that was administered to the PCBT group.

The participants were all clients in vocational rehabilitation, which meant that many of them were in the maintenance stage of their mental health recovery. Therefore, these results cannot be generalized to individuals who are at the beginning of their mental health recovery. Furthermore, in comparison to the NCBT group, the PCBT group was closer to the end of their vocational rehabilitation, which meant they were closer to employment. Therefore, there were other factors that justified the lack of improvement in the PCBT group, such as anxiety about starting a new job or having a job interview.

Measures. The measures used to collect data were not highly objective. Three of the measures were self-report and one of the measures was based on caseworker’s judgement. The participants and the caseworkers could have provided biased responses. In particular, the caseworkers were aware of the intent and hypothesis of the study. The caseworker rating scale was also an informal measure created by the student researcher. Since it was not an empirically validated measure, the ability to generalize the caseworker rating scale results is minimized. Additionally, the validity for the observing subscale for the FFMQ is questionable (Gu et al., 2016) as well as the discriminant validity for the AAQ-II (Wolgast, 2014). Lastly, although the student researcher, who was a co-facilitator, was supervised, there was no formal measure to ensure treatment integrity for the ACT sessions, such as inter-rater reliability.

Data calculations. The mean scores of each measure were used to compare the PCBT group with the NCBT group and used to calculate the percentage of improvement. This may not have been the most accurate way to compare the two groups. The groups were so small that one
outlier could have affected the entire mean score particularly for the PCBT group, which had the data for only two participants to calculate the mean. Therefore, utilizing the mean to compare the two groups minimizes the accuracy of the conclusions made in this study.

**Multilevel challenges.**

*Client level.* Attendance was the main issue with the participants particularly with the PCBT group. Some of the participants were further in their vocational rehabilitation than other participants so they were involved with job interviews or starting new jobs. This interfered with group session attendance as some participants were unable to make it to some of the sessions. Furthermore, one participant from the PCBT group withdrew from the study, which further reduced the number of participants.

*Program level.* Conducting ACT sessions twice a week was a demanding schedule for the participants and the staff member co-facilitator particularly if a participant missed a group session. With ACT sessions twice a week, it was difficult to schedule make-up sessions with participants prior to the next session. This led to some participants not getting full hour and a half make-up sessions. Furthermore, the student researcher, who was a co-facilitator, was not formally trained in ACT. Although the staff co-facilitator was trained in ACT, it is still relevant to address the student researcher’s lack of training.

*Organizational level.* Effectively implementing therapy can be difficult when the location of the organization does not allow for a therapeutic atmosphere. Frequent loud noises outside of the building, such as yelling or police sirens, can negatively affect clients’ ability to fully engage in practicing therapeutic skills. This proved to be a barrier during this study and made it difficult to effectively practice mindfulness.

*Societal level.* Despite some progress in the mainstream knowledge of mental health, stigma towards individuals with mental health difficulties is still apparent, particularly if mental illness prevents an individual from working. Words, such as lazy and overdramatic, are often associated with individuals who have anxiety or depression. Because of this, people with mental illness may not seek help when they need it or be hesitant to engage in therapy. Awareness and understanding of this barrier can allow for a more wholesome perspective when delivering therapy to a group of adults.

**Implications and future recommendations.** Anxiety and depression can affect an individual’s ability to function in everyday life and is common among mental health-related disabilities (Statistics Canada, 2012). Mental health professionals need to know the best approach for treating these disorders. This study’s results suggested that CBT might inhibit the benefits of ACT; however, further research into the appropriate prescribed amounts or combinations of CBT and ACT is warranted. Replications of this study should include more stringent participant criteria, better measures for data collection, and more control over the CBT received by the participants. Additionally, future studies should consider conducting ACT sessions once a week to allow for better participant attendance and content integration. Future studies could extend this research to examine how previous ACT affects CBT or how combinations of CBT and ACT compare to individual administrations of those therapies.

**Conclusion**

This study sought to provide an innovative approach to examining CBT and ACT in order to contrast the extensive literature on the juxtaposition of CBT and ACT (Craske et al., 2014; Davies et al., 2015; Mesri et al., 2017; Wolitzky-Taylor et al., 2012). Prior to this study, it was unknown if CBT and ACT should be mutually exclusive. Evaluating the effects of previous
CBT on ACT added to the literature on eclectic therapy approaches for anxiety and depression. Overall, this study’s results demonstrated that within the current environment of the agency, ACT assisted in decreasing anxiety and depression and increasing certain components of mindfulness, but previous CBT may inhibit the extent of those benefits. There were many limitations to this study, such as the small sample size and lack of control over participants’ previous psychotherapy. Further research into examining the relationship between CBT and ACT could allow for more robust literature on combinations and interactions of behavioural therapies.
References


Appendix A

Ethics Letter of Approval

SLC REB Reference Number: 2017-REC11AB

Project Title: Examining the Effects of Previous Cognitive Behavioural Therapy on Acceptance and Commitment Therapy

Dear Arianna Bullet:

I am writing to advise you that the Research Ethics Committee – Psychology (REC-P), a subcommittee of the St. Lawrence College Research Ethics Board (SLC-REB), has granted Approval to the above-named research study. Your research may now begin.

You have six (6) months to complete the project from the time of approval. Should you require more time to complete your project, you will be required to submit a SLC-REB Request for Renewal Form. This must be submitted prior to SLC-REB approval anniversary date. If you are proposing changes to your approved project then you will need to submit prior to implementing your changes a SLC-REB Request for an Amendment Form.

Please review St. Lawrence College’s Policy on Research Integrity. You are obligated to keep your files up to date and inform the SLC-REB of any changes to your study.

Any adverse or unanticipated events during the course of your research must be reported to the SLC-REB as soon as you become aware of them. The SLC-REB reserves the right to review your file at any time to ensure that research is being conducted in accordance with all applicable SLC Policies and the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans (TCPS2, 2014).

Once your project is complete, you are required to complete a Project Completion/Termination Form. This form must be submitted as a final report about your research to the SLC-REB by no later than April 02, 2018.

Best wishes for the successful completion of your project.

Best Regards,

Jamie, Morris-Pocock
Chair, Research Ethics Board
Appendix B
Participant Consent Form

100 Portsmouth Ave.
Kingston, Ontario K7L 5A6

Project Title: Examining the Effects of Previous Cognitive Behavioural Therapy on Acceptance and Commitment Therapy

Principal Investigator: Arianna Bullett
Name of Supervisor: David Sider
Name of Institution: St. Lawrence College
Name of Agency: Addiction and Mental Health Services – Kingston, Frontenac, Lennox, and Addington (AMHS – KFLA): Vocational Services

Dear participant

You have been selected to participate in a 6-week research project. I am a fourth year Behavioural Psychology student at St. Lawrence College. As part of my placement here, I have to complete a research project, and I would like your help.

What is this project about, and what will I have to do?

The goal of this project is to compare the progress in acceptance and commitment therapy (ACT) between people who have received a cognitive behavioural therapy (CBT) based program and people who have not received a CBT-based program. This project will require you to attend 12, one-hour group sessions of ACT. The group size will be about three to four people, and I will be leading the group along with David Sider. The ACT sessions will be twice a week and held at AMHS – KFLA (552 Princess Street). It is important that you are present for all ACT sessions. However, if you are unable to attend a session, an individual make-up session can be scheduled. Also, you will be asked to complete three questionnaires before this project begins and after the project ends. The questionnaires will cover anxiety and depression symptoms, mindfulness, and acceptance.

Where will the information be kept, and what information will be used?

If you choose to participate in this project, the information from the three questionnaires you fill out will be coded with a number that is randomly assigned to you to maintain confidentiality. A list of the names and numbers assigned will be kept in a locked drawer behind a locked door. If you choose to participate, the consent form you sign and this study’s data will be stored in a locked filing cabinet at AMHS – KFLA. The consent form will be kept for 10 years after you exit vocational services and then shredded. The study’s data will be kept for 7 years after you exit vocational services and then shredded. The electronic version of the data and the consent form will stay on your online EMHware file. During the study, the data will be stored on a password-protected laptop and will not have any identifying information. After the study has concluded, the
data will be deleted from the laptop. Because this is a research project, it should be noted that the data from the questionnaires may be published, presented at conferences, and presented at the Behavioural Psychology Poster Gala; however, all identifying information will be removed when these data are presented.

**What are the risks and benefits of participating?**

There are some risks to this project if you choose to participate. ACT is a therapy that is based on mindfulness. This could trigger past trauma and cause emotional distress. Should this occur, you can access counselling services any time and stop participating in this study if you wish to do so. However, if you choose to participate in this study, you may notice an increase in your self-awareness and ability to cope effectively as well as a decrease in your anxiety and/or depression symptoms.

**Do I have to participate?**

Participation in this project is entirely your choice. Your decision to participate in this study will not affect the services you are currently receiving at AMHS – KFLA. Should you choose to participate in this project, you may withdraw at any time without explanation or consequences. You may also withdraw the use of your data from this study one month after the study has concluded. If you withdraw during the project, your data will not be used and will be destroyed accordingly. Withdrawing from the project will not affect the services you receive at AMHS – KFLA. To withdraw from the study at any point, contact David Sider at 613-544-1129 or dsider@amhs-kfla.ca.

**Who should I contact for further information?**

This project has been approved by the Research Ethics Committee for Behavioural Psychology (REC-P) under the authority of the St. Lawrence College Research Ethics Board (SLC-REB). If you have any additional questions, you can contact me, Arianna Bullett, through David Sider at 613-544-1129 or dsider@amhs-kfla.ca. If you have any questions about the involvement of a student researcher, please contact my college supervisor Lana Di Fazio at LDiFazio@sl.on.ca. If you have any questions or concerns about your rights as a research participant, please contact the SLC-REB at reb@sl.on.ca.

I understand that by signing this consent form:

- I am agreeing that the project has been explained to me.
- I am agreeing that I have received a copy of this consent form.
- I am aware of the expectations of this project and am willing to participate.
- I am aware that my information will be kept confidential unless required by law.
- I am aware that my data collected during this study may be published or presented at conferences with no identifying information present.
- I am aware that I can withdraw from this study at any point, including a month after the study has concluded, and still receive services at AMHS - KFLA.
I give my consent to take part in this project:

Participant: ____________________________________________________________

Name (Printed)   Signature   Date

Witness: ________________________________________________________________

Name (Printed)   Signature   Date

Researcher: _____________________________________________________________

Name (Printed)   Signature   Date
Appendix C
Participant Follow-up Consent Form

Project Title: Examining the Effects of Previous Cognitive Behavioural Therapy on Acceptance and Commitment Therapy

Principal Investigator: Arianna Bullett
Name of Supervisor: David Sider
Name of Institution: St. Lawrence College
Name of Agency: Addiction and Mental Health Services – Kingston, Frontenac, Lennox, and Addington (AMHS – KFLA): Vocational Services

Dear participant

You have been selected to participate in a follow-up study for the acceptance and commitment therapy (ACT) group that you attended in November.

What is a follow-up, and what will I have to do?
A follow-up means that I would like to see the long-term effects of ACT and if the skills you learned are still helpful to you months after the group ended. If you choose to participate, you will be required to come in to AMHS – KFLA (552 Princess Street) in January for approximately one hour and complete the three questionnaires that you completed previously in November. The three questionnaires cover anxiety and depression symptoms, mindfulness, and acceptance. Also, you will be asked to complete a brief questionnaire on any changes in your routine since the end of the ACT group and how often you have used the skills learned in the ACT group.

Where will the information be kept, and what information will be used?
If you choose to participate in this follow-up, the information from the three questionnaires you fill out will be coded with a number that is randomly assigned to you to maintain confidentiality. A list of the names and numbers assigned will be kept in a locked drawer behind a locked door. If you choose to participate, the consent form you sign and this study’s data will be stored in a locked filing cabinet at AMHS – KFLA. The consent form will be kept for 10 years after you exit vocational services and then shredded. The study’s data will be kept for 7 years after you exit vocational services and then shredded. The electronic version of the data and the consent form will stay on your online EMHware file. During the study, the data will be stored on a password-protected laptop and will not have any identifying information. After the study has concluded, the data will be deleted from the laptop. Because this is a research project, it should be noted that the data from the questionnaires may be published, presented at conferences, and presented at the Behavioural Psychology Poster Gala; however, all identifying information will be removed when these data are presented.
What are the risks and benefits of participating?

There are some risks to this follow-up if you choose to participate. Answering some of the questions about changes in your routine could trigger past trauma and cause emotional distress. Should this occur, you can access counselling services any time and stop participating in the follow-up if you wish to do so. However, if you choose to participate in this follow-up, you will be contributing to the growing research on ACT.

Do I have to participate?

Participation in this follow-up is entirely your choice. Your decision to participate in this study will not affect the services you are currently receiving at AMHS – KFLA. Should you choose to participate in this follow-up, you may withdraw at any time without explanation or consequences. You may also withdraw the use of your data from this study one month after the study has concluded. Withdrawing from the project will not affect the services you receive at AMHS – KFLA. To withdraw from the study at any point, contact David Sider at 613-544-1129 or dsider@amhs-kfla.ca.

Who should I contact for further information?

This follow-up has been approved by the Research Ethics Committee for Behavioural Psychology (REC-P) under the authority of the St. Lawrence College Research Ethics Board (SLC-REB). If you have any additional questions, you can contact me, Arianna Bullett, through David Sider at 613-544-1129 or dsider@amhs-kfla.ca. If you have any questions about the involvement of a student researcher, please contact my college supervisor Lana Di Fazio at LDiFazio@sl.on.ca. If you have any questions or concerns about your rights as a research participant, please contact the SLC-REB at reb@sl.on.ca.

I understand that by signing this consent form:
- I am agreeing that the follow-up has been explained to me.
- I am agreeing that I have received a copy of this consent form.
- I am aware of the expectations of this follow-up and am willing to participate.
- I am aware that my information will be kept confidential unless required by law.
- I am aware that my data collected during this follow-up may be published or presented at conferences with no identifying information present.
- I am aware that I can withdraw from this study at any point, including a month after the study has concluded, and still receive services at AMHS - KFLA.
I give my consent to take part in this follow-up:

Participant: ___________________________________________________________
Name (Printed)                      Signature                      Date

Witness: _____________________________________________________________
Name (Printed)                      Signature                      Date

Researcher: _________________________________________________________
Name (Printed)                      Signature                      Date
Appendix D

Staff Consent Form

100 Portsmouth Ave.
Kingston, Ontario K7L 5A6

Project Title: Examining the Effects of Previous Cognitive Behavioural Therapy on Acceptance and Commitment Therapy

Principal Investigator: Arianna Bullett
Name of Supervisor: David Sider
Name of Institution: St. Lawrence College
Name of Institution/Agency: Addiction and Mental Health Services – Kingston, Frontenac, Lennox, and Addington (AMHS – KFLA): Vocational Services

Dear staff member

You have been selected to participate in my research project. I am a fourth year Behavioural Psychology student at St. Lawrence College. As part of my placement here, I have to complete a research project and I would like your help.

What is this project about, and what will I have to do?

The goal of this project is to compare the progress in acceptance and commitment therapy (ACT) between people who have received a cognitive behavioural therapy (CBT) based program and people who have not received a CBT-based program. This project will require you to rate your client on a scale of 1 to 10 on the following items: anxiety and depression symptoms, mindfulness, goal setting ability, and value identification ability. You will be asked to complete these ratings now and 6 weeks from now.

Where will the information be kept, and what information will be used?

If you choose to participate in this project, the information from the rating questionnaire you fill out will be coded with your client’s assigned number to maintain confidentiality. The electronic version of the data will stay on your client’s file. The paper version of the data will be stored in a locked filing cabinet at the agency and kept for 7 years after your client exits vocational services. After this time period, it will be shredded. This consent form you sign will be stored at St. Lawrence College for 10 years and then shredded. Also, the data will be stored on a password protected laptop and will not have any identifying information. After the study has concluded, the data will be deleted from the laptop. Because this is a research project, it should be noted that the data from the questionnaire may be published, presented at conferences, and presented at the Behavioural Psychology Poster Gala; however, all identifying information will be removed when this data is presented.
What are the risks and benefits of participating?
There are no foreseeable risks or benefits for participating in this study. However, your participation in this study will contribute to the academic literature about ACT.

Do I have to participate?
Participation in this project is entirely your choice. Your decision to participate in this study will not affect your job security or performance at AMHS – KFLA. Should you choose to participate in this project, you may withdraw at any time without explanation or consequences. You may also withdraw the use of your data from this study one month after the study has concluded. If you withdraw during the project, your data will not be used and will be destroyed accordingly. Withdrawing from the project will not affect your job security or performance at AMHS – KFLA. To withdraw from the study at any point, contact David Sider at [redacted] or [redacted].

Who should I contact for further information?
This project has been approved by the Research Ethics Committee for Behavioural Psychology (REC-P) under the authority of the St. Lawrence College Research Ethics Board (SLC-REB). If you have any additional questions, you can contact me, Arianna Bullett, through David Sider at [redacted] or [redacted]. If you have any questions about the involvement of a student researcher, please contact my college supervisor Lana Di Fazio at LDiFazio@sl.on.ca. If you have any questions or concerns about your rights as a research participant, please contact the SLC-REB at reb@sl.on.ca.

I understand that by signing this consent form:
- I am agreeing that the project has been explained to me.
- I am agreeing that I have received a copy of this consent form.
- I am aware of the expectations of this project and am willing to participate.
- I am aware that my information will be kept confidential unless required by law.
- I am aware that my data collected during this study may be published or presented at conferences with no identifying information present.
- I am aware that I can withdraw from this study at any point, including a month after the study has concluded, and it will not impact my job security or performance at AMHS - KFLA.

I give my consent to take part in this project:

Staff Member: __________________________________________________________
Name (Printed)  Signature  Date

Witness: ______________________________________________________________
Name (Printed)  Signature  Date

Researcher: ____________________________________________________________
Name (Printed)  Signature  Date
Appendix E

Consent Form for Use of Agency Name

Date: ___________

Consent for Use of Agency Name

I __________________________ consent to the use of the name of Addiction and Mental Health Services – Kingston, Frontenac, Lennox, and Addington: Vocational Services in Arianna Bullett’s applied thesis for the Honours Bachelor of Behavioural Psychology program at St. Lawrence College.

__________________________________________  ______________________________
Agency Staff Signature  Student Signature

__________________________________________  ______________________________
Printed Name  Printed Name
Participant Information

PCBT Group

Participant 1
This participant was a 58-year-old woman who had been in vocational rehabilitation for approximately seven months. She completed the agency’s CBT-based program approximately two months prior to the commencement of the current group. Although she had no formal mental health diagnoses, she self-identified with depression and anxiety. In terms of her education, this participant had completed high school.

Participant 2
This participant was a 40-year-old man who had been in vocational rehabilitation for approximately 10 months. He completed the agency’s CBT-based program approximately six months prior to the commencement of the current group and had no formal mental health diagnoses. This participant had a history of addiction and self-identified with anxiety. He had completed high school and had some experience with post-secondary education.

Participant 3
This participant was a 44-year-old man who had been in vocational rehabilitation for approximately 13 months. He completed the agency’s CBT-based program approximately two months prior to the beginning of the group and had a formal mental health diagnosis of recurrent major depressive disorder. This participant had completed high school and had some post-secondary credits.
NCBT Group

Participant 4

This participant, a 22-year-old man, had been a client at vocational services for approximately two months and had formal diagnoses of generalized anxiety disorder and panic disorder. In terms of education, he had completed a post-secondary program.

Participant 5

This participant was a 28-year-old woman who had formal diagnoses of agoraphobia with panic disorder and social phobia. She had been a client at vocational services for approximately one month and had completed a post-secondary program.

Participant 6

This participant was a 57-year-old woman who had a formal mental health diagnosis of chronic depression. She also coped with chronic back pain and had been a client with vocational services for approximately four months. In terms of education, she had completed a post-secondary program.

Participant 7

This participant was a 31-year-old man who had formal diagnoses of attention deficit disorder and social anxiety disorder. He had been a client in vocational services for approximately 13 months and had some experience with post-secondary education.

Participant 8

This participant was a 48-year-old woman who had been a client in vocational services for approximately two months and had a diagnosis of fibromyalgia. She had no formal mental health diagnoses but she self-identified with depression and anxiety. In terms of education, this participant had completed high school.
Appendix G

Session Handouts

Session One

Slide Show Presentation
Can be retrieved from
Unpublished manuscript, School of Community Services, St. Lawrence College, Kingston, Canada.
* Modified by researcher

Mindfulness Exercise: Eating Raisins
Can be retrieved from
*Modified to eating grapes

Brief Mindfulness
Can be retrieved from

Preparing the Way for Something New (Reading)

Session Two

Slideshow Presentation
Can be retrieved from
Unpublished manuscript, School of Community Services, St. Lawrence College, Kingston, Canada.
* Modified by researcher

Notice 5 things
Can be retrieved from
Matrix
Format of handout can be retrieved from

Session Three

Slideshow Presentation
Can be retrieved from

*Modified by researcher

Imagine you are 80 years old
Can be retrieved from

Bull’s Eye
Can be retrieved from

Brief Mindfulness + Leaves on a Stream
Can be retrieved from

Demons on a Boat (Reading)

Troubleshooting Values (Reading)

Session Four

Values and Goals Worksheet
Can be retrieved from
**Session Five**

**Slideshow Presentation**
Can be retrieved from
Unpublished manuscript, School of Community Services, St. Lawrence College, Kingston, Canada.
* Modified by researcher

**Brief Mindfulness + Clouds in the Sky**
Can be retrieved from
*Modified by Rouleau and Jobin (2014) from Leaves on a Stream

**True Blues (Reading)**
Can be retrieved from
Boston, MA: Trumpeter.

**Session Six**

**Slideshow Presentation**
Can be retrieved from
Unpublished manuscript, School of Community Services, St. Lawrence College, Kingston, Canada.
* Modified by researcher

**Session Seven**

**Slideshow Presentation**
Can be retrieved from
Unpublished manuscript, School of Community Services, St. Lawrence College, Kingston, Canada.
* Modified by researcher
Scary Pictures (Reading)
Can be retrieved from

Session Eight

**Slideshow Presentation**
Can be retrieved from
* Modified by researcher

**Awareness Chart**
Can be retrieved from
*Modified by researcher

Session Nine

**Expanded Awareness Chart**
Can be retrieved from
* Modified by researcher

**Look Who’s Talking (Reading)**
Can be retrieved from

Session Ten

**Slideshow Presentation**
Can be retrieved from
* Modified by researcher
Notice Yourself Noticing
Can be retrieved from

Life of Plenty (Reading)
Can be retrieved from

Session Twelve

ACT Hexaflex
Diagram can be retrieved from
www.contextualpsychology.com

Onward and Upward (Reading)
Can be retrieved from

A Meaningful Life (Reading)
Can be retrieved from

Suggestions for Crisis (Reading)
Can be retrieved from
Appendix H

Weekly Homework Sheets

Name: ____________________________  Today’s Date: ______________________

Homework Take-up Date: ______________________________

Reading Completed?  Yes  No  N/A

Activity Sheet Completed?  Yes  No  N/A

Practiced Mindfulness?  Yes  No

<table>
<thead>
<tr>
<th>Day</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of times mindfulness was practiced</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:
Appendix I

DASS 42

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

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.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1 I found myself getting upset by quite trivial things
2 I was aware of dryness of my mouth
3 I couldn't seem to experience any positive feeling at all
4 I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5 I just couldn't seem to get going
6 I tended to over-react to situations
7 I had a feeling of shakiness (e.g., legs going to give way)
8 I found it difficult to relax
9 I found myself in situations that made me so anxious I was most relieved when they ended
10 I felt that I had nothing to look forward to
11 I found myself getting upset rather easily
12 I felt that I was using a lot of nervous energy
13 I felt sad and depressed
14 I found myself getting impatient when I was delayed in any way (e.g., lifts, traffic lights, being kept waiting)
15 I had a feeling of faintness
16 I felt that I had lost interest in just about everything
17 I felt I wasn't worth much as a person
18 I felt that I was rather touchy
19 I perspired noticeably (e.g., hands sweaty) in the absence of high temperatures or physical exertion
20 I felt scared without any good reason
21 I felt that life wasn't worthwhile

**Reminder of rating scale:**

0  Did not apply to me at all
1  Applied to me to some degree, or some of the time
2  Applied to me to a considerable degree, or a good part of time
3  Applied to me very much, or most of the time

<p>| | | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>I found it hard to wind down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23</td>
<td>I had difficulty in swallowing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>I couldn't seem to get any enjoyment out of the things I did</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>I was aware of the action of my heart in the absence of physical\ exertion (eg, sense of heart rate increase, heart missing a beat)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>I felt down-hearted and blue</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>I found that I was very irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28</td>
<td>I felt I was close to panic</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29</td>
<td>I found it hard to calm down after something upset me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td>I feared that I would be &quot;thrown&quot; by some trivial but unfamiliar task</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31</td>
<td>I was unable to become enthusiastic about anything</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>32</td>
<td>I found it difficult to tolerate interruptions to what I was doing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33</td>
<td>I was in a state of nervous tension</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34</td>
<td>I felt I was pretty worthless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36</td>
<td>I felt terrified</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>37</td>
<td>I could see nothing in the future to be hopeful about</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>38</td>
<td>I felt that life was meaningless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>39</td>
<td>I found myself getting agitated</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>40</td>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>41</td>
<td>I experienced trembling (eg, in the hands)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>42</td>
<td>I found it difficult to work up the initiative to do things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**DASS 42 SCORE SHEET**

Enter each score from the questionnaire into the first two columns.
Add up each row and enter the score into the available box (D, A or S)
Add up the each of the D, A and S columns.
The total for each column is the score for that trait:
   D = Depression
   A = Anxiety
   S = Stress
Use the ratings table below to assess the meaning of each score.

**Score Calculation:**

<table>
<thead>
<tr>
<th>Q</th>
<th>Score</th>
<th>Q</th>
<th>Score</th>
<th>All D scores</th>
<th>All A scores</th>
<th>All S scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
<td>2</td>
<td>23</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>28</td>
<td>8</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>30</td>
<td>10</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>32</td>
<td>12</td>
<td>33</td>
<td></td>
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<tr>
<td>13</td>
<td>34</td>
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<td>15</td>
<td>36</td>
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<td>37</td>
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<td>17</td>
<td>38</td>
<td>18</td>
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</tr>
<tr>
<td>21</td>
<td>42</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Total for D | Total for A | Total for S

**Score Interpretation:**

<table>
<thead>
<tr>
<th>Level</th>
<th>Depression (D)</th>
<th>Anxiety (A)</th>
<th>Stress (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0 – 9</td>
<td>0 – 7</td>
<td>0 – 14</td>
</tr>
<tr>
<td>Mild</td>
<td>10 – 13</td>
<td>8 – 9</td>
<td>15 – 18</td>
</tr>
<tr>
<td>Moderate</td>
<td>14 – 20</td>
<td>10 – 14</td>
<td>19 – 25</td>
</tr>
<tr>
<td>Severe</td>
<td>21 – 27</td>
<td>15 – 19</td>
<td>26 – 33</td>
</tr>
<tr>
<td>Extremely Severe</td>
<td>28+</td>
<td>20+</td>
<td>34+</td>
</tr>
</tbody>
</table>

Appendix J

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.  
   1 2 3 4 5 6 7

2. I'm afraid of my feelings.  
   1 2 3 4 5 6 7

3. I worry about not being able to control my worries and feelings.  
   1 2 3 4 5 6 7

4. My painful memories prevent me from having a fulfilling life.  
   1 2 3 4 5 6 7

5. Emotions cause problems in my life.  
   1 2 3 4 5 6 7

6. It seems like most people are handling their lives better than I am.  
   1 2 3 4 5 6 7

7. Worries get in the way of my success.  
   1 2 3 4 5 6 7

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 K

FFMQ

Five Facet Mindfulness Questionnaire

Description:

This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness as it is currently conceptualized. The five facets are observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. More information is available in:

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.

1 never or very rarely true
2 rarely true
3 sometimes true
4 often true
5 very often or always true

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.
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.
Scoring Information:

Observe items:
1, 6, 11, 15, 20, 26, 31, 36

Describe items:
2, 7, 12R, 16R, 22R, 27, 32, 37

Act with Awareness items:

Nonjudge items:

Nonreact items:
4, 9, 19, 21, 24, 29, 33

Reference:

Appendix L

Caseworker Rating Scale

Caseworker Rating Scale

To the best of your ability, please rate your client on a scale of 1 to 10 on the following:

Anxiety Symptoms – This could include the client verbally reporting symptoms or based on your own observations. For the purposes of this scale, zero to two symptoms would be considered few symptoms.

<table>
<thead>
<tr>
<th>Few symptoms</th>
<th>Many symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>

Mindfulness – Is your client self-aware with regards to mental health symptoms? Does your client have a lot of negative thoughts? Does your client let those thoughts affect their behaviour? (i.e., low mindfulness might entail a lack of body awareness, high incidences of negative thoughts, and letting those thoughts affect their behaviour).

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>

Goal Setting and Achievement Ability - How is your client’s ability to create and achieve goals?

<table>
<thead>
<tr>
<th>Low ability</th>
<th>High ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>

Identification of Values – How difficult is it for your client to identify their values?

<table>
<thead>
<tr>
<th>Difficult</th>
<th>Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>
Appendix M

Participant Feedback Form

**Participant Feedback Form**

How would you rate the ACT group sessions overall?

1   2   3   4   5   6   7   8   9   10

Not good   Very good

Comments

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

After participating in this group, how knowledgeable do you feel about ACT?

1   2   3   4   5   6   7   8   9   10

Not knowledgeable at all   Very knowledgeable

Comments

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

How useful was the information you learned?

1   2   3   4   5   6   7   8   9   10

Not useful at all   Very useful

Comments

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

What did you find was the most helpful for you in this group? Why?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
What did you find was the least helpful for you in this group? Why?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

How were the group facilitators (i.e., were the concepts clearly explained? Were the facilitators engaging? Did you feel that the facilitators were prepared?)

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What would you change about this group?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Additional comments.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
Follow-up Questionnaire

In order to get more information regarding the effectiveness of acceptance and commitment therapy (ACT), it is helpful to have additional details. Participation in this questionnaire is your choice and will not affect the services you are receiving now.

Have there been any changes in your routine since the end of the ACT group on November 24, 2017? Check all boxes that apply to you.

- [ ] Changes in medication (i.e., mental-health related medication)
- [ ] Attended/attending a therapy group
- [ ] Received/receiving one-on-one counselling
- [ ] Experienced a major loss of some kind (e.g., death of a loved one, job loss, loss of housing)
- [ ] Experienced a major life change (e.g., new job, new volunteer position, moving/recently moved)
- [ ] Experienced a crisis situation or traumatic event
- [ ] A loved one experienced a crisis situation or traumatic event
- [ ] Experienced concerning news about your health (e.g., waiting to receive/received a life-changing diagnosis)
- [ ] A loved one experienced concerning news about their health (e.g., waiting to receive/received a life-changing diagnosis)
- [ ] None of the above situations apply to me

How often have you used the skills you learned from the ACT group since it ended?

1  2  3  4  5  6  7  8  9  10

[ ] Not at all  [ ] All the time

Comments

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Appendix O

Follow-up Permission Form

Dear participant,

Thank you for attending the acceptance and commitment therapy group. Because this is a research study, it is helpful to have as much data as possible. Therefore, we may conduct a follow-up. A follow-up would involve us contacting you in January, 2018 and setting up a time for you to come in and redo the three assessments that you completed for this group. Participation in the follow-up is your choice and will not affect the services you are receiving now. Confidentiality and use of data procedures are the same as outlined in the consent form you signed to participate in this study.

Would you like to participate in the follow-up (you may withdraw from the follow-up at any time even if you agree to participate)? Please circle a response.

Yes  No

If yes, please provide the contact information you would like us to use.

Name________________________________

Phone Number__________________________

Email________________________________

Signature_____________________________  Date____________________
Appendix P

ACT Session Outlines

Week 1

Session 1

- Completion of pre-test measures
- Introduction/welcome (introduce self and participants)
- Build group guidelines
- Mountain metaphor – we are all on our own mountain with its own unique challenges. We are all at different points of our mountain, and no one can see the barriers on our mountain like we. However, people can offer a different perspective from their mountain (Boone & Myler, 2011; Rouleau & Jobin, 2014).
- Discussion about diagnosis versus symptoms – ACT does not focus on a diagnosis but rather the similarities in symptoms of a diagnosis (Rouleau & Jobin, 2014).
- Mindful eating exercise
- Psychoeducation
  - Definition of mindfulness – being in the here and now without judgement (Boone & Myler, 2011; Rouleau & Jobin, 2014)
  - Definition of acceptance – the willingness to face the present situation (Boone & Myler, 2011; Rouleau & Jobin, 2014).
  - Definition of commitment – Following our values by goal setting and persevering with those goals (Boone & Myler, 2011; Rouleau & Jobin)
    - Bike riding metaphor – you do not learn how to ride a bike by reading about it or watching others. You learn by getting on the bike and pedaling. You may fall off the bike at times but the important thing is to get back on it. ACT is similar to this because we learn how to use these techniques by practicing them. You may have difficulty some weeks either with goals or practicing mindfulness, but it is important to keep trying (Boone & Myler, 2011; Rouleau & Jobin, 2014).
  - Discussion on what coping strategies participants use
  - Star exercise/ example – Look at the picture of the star but do not think any thoughts about the star (Harris, 2007).
  - Examples of control techniques (Harris, 2007)
  - Tug-of-war metaphor/example – using control techniques is like constantly being in a tug-of-war with your anxious thoughts. ACT states that instead of pulling on the rope, we should let go of the rope (Boone & Myler, 2011; Rouleau & Jobin, 2014).
- Brief mindfulness exercise
- Homework:
  - Practice mindfulness
  - Reading: Preparing the Way for Something New (Forsyth & Eifert, 2007)

Session 2

- Brief guided mindfulness
- Introduction of the ACT hexaflex (add acceptance and contact with the present moment)
• Completion of matrix activity
• Homework reminder
• Notice 5 things (grounding) exercise

**Week 2**

**Session 3**

• Brief guided mindfulness
• Homework review
• Review hexaflex and matrix activity
• Imagine you are 80 years old activity
• Psychoeducation
  • Lighthouse metaphor – values are like a lighthouse. We are all on our own boat and sometimes the weather is clear and it is smooth sailing toward the lighthouse. Other times the weather is rough; the waves are crashing down on us and the bottom is rocky. When the weather is bad, we focus our attention on trying to avoid or fight the waves and the rocks and drift away from the lighthouse. However, like our values, the lighthouse will always be there no matter how far we drift away from it.
  • Definition of values – values are how we want to be as a person. They are things that internally motivate us and guide our behaviour (Boone & Myler, 2011; Rouleau & Jobin, 2014).
  • Discussion on aspects that are not considered values
    • Values versus goals
    • Things that we cannot change such as being happy or being loved and accepted by others.
  • Compass metaphor – values are like true north on a compass. Sometimes our behaviour drifts off towards the east, west, or south but no matter how far away we drift from true north we can always come back to it (Boone & Myler, 2011; Rouleau & Jobin, 2014).

• Homework:
  • Practice mindfulness
  • Readings: Chapter 9 *Demons on a Boat* and Chapter 26 *Trouble-Shooting Values* (Harris, 2007)
  • Fill out question side of bull’s eye handout for October 27, 2017

**Session 4**

• Leaves on a stream guided mindfulness
• Homework check-in
• Hexaflex discussion (add values)
• Review concept of values
• Completion of the bull’s eye activity
• Homework reminder
• Additional homework:
  • Complete value, goal, barriers and strategies on goal worksheet
• Notice 5 things exercise

Week 3

Session 5
• Leaves on a stream guided mindfulness
• Hexaflex discussion (add committed action)
• Review homework
• Psychoeducation
  o Definition of committed action – following through with our goals (Harris, 2007)
• Completion of values and goals worksheet
• Homework:
  o Practice mindfulness
  o Finish values and goals worksheet
  o Reading: Chapter 5 True Blues (Harris, 2007)
• Clouds in the sky guided mindfulness

Session 6
• Leaves on a stream guided mindfulness
• Discussion about goals
• Hexaflex discussion (add cognitive defusion)
• Psychoeducation
  o Definition of thoughts – Anything your mind creates (Boone & Myler, 2011; Rouleau & Jobin, 2014)
  o Fusion versus defusion
    ▪ Thoughts do not control behaviours example – ask participants to stand and then ask them to think “don’t stand” or “stop standing”. Participants are still able to stand despite their thoughts telling them otherwise (Boone & Myler, 2011; Rouleau & Jobin, 2014).
    ▪ Green glasses metaphor – Tell participants that thoughts can be like glasses over our eyes that prevent us from seeing. The technique of defusion is simply moving the glasses from our eyes to be on top of our head or on our nose. The glasses are still there but they are no longer blocking our vision (Boone & Myler, 2011; Rouleau & Jobin, 2014).
• Homework reminder
• Leaves on a stream guided mindfulness

Week 4

Session 7
• Clouds in the sky guided mindfulness
• Homework review
• Discussion about goals
• Hexaflex discussion
• Psychoeducation
  o Discussion about workable versus unworkable thoughts
THE EFFECTS OF PREVIOUS CBT ON ACT

- Defusion techniques (Harris, 2007)
  - Thanking the mind
  - Rephrasing (“I am having the thought that…”)
  - Naming the story (“I am a failure story”)
  - Silly voices
  - Singing thoughts to the tune of a song
  - Repetition

- Homework:
  - Practice mindfulness
  - Reading: Chapter 8 *Scary Pictures* (Harris, 2007)
  - Try at least two defusion techniques before the next session

- Brief guided mindfulness

**Session 8**
- Leaves on a stream guided mindfulness
- Discussion about goals and defusion
- Hexaflex discussion
- Psychoeducation
  - Discussion on pervasive thoughts
  - Examples of common thoughts that “hook” people (Boone & Myler, 2011; Rouleau & Jobin, 2014).
- Introduction of awareness chart
- Homework reminder
- Additional Homework:
  - Complete one row of the awareness chart

- Clouds in the sky guided mindfulness

**Week 5**

**Session 9**
- Clouds in the sky guided mindfulness
- Homework review
- Discussion about goals and defusion
- Hexaflex discussion
- Group completion of the expanded awareness chart
- Homework:
  - Practice mindfulness
  - Practice defusion
  - Reading: Chapter 7 *Look Who’s Talking* (Harris, 2007)
  - Complete one row of the expanded awareness chart for next session

- Notice 5 things guided mindfulness

**Session 10**
- Leaves on a stream guided mindfulness
- Discussion about goals, defusion, and expanded awareness chart
- Hexaflex discussion (add self-as-context)
- Psychoeducation
THE EFFECTS OF PREVIOUS CBT ON ACT

- Introduction to the observing-self
  - Sky metaphor – the sky is the observing-self and the weather is our thoughts and feelings. Like the weather, our thoughts and feelings change. No matter how big the storm, the sky always has room for the weather. No matter the weather, the sky remains unharmed and the weather will continue to change. Sometimes we forget that the sky is there but if we can rise high enough and reach clear sky. We can learn to access this part of ourselves, and this is the observing-self (Boone & Myler, 2011; Rouleau & Jobin, 2014).
  - House metaphor – Inside a house the furniture will change and the colour of the walls may change as well but the outside of the structure stays the same. The inside of the house is our thoughts and emotions. The outer structure of the house is the observing-self (Boone & Myler, 2011; Rouleau & Jobin, 2014).

- Homework reminder
- Additional Homework:
  - Reading: Chapter 29 *Life of Plenty* (Harris, 2007)
  - Notice yourself noticing guided mindfulness exercise

**Week 6**

**Session 11**
- Leaves on stream guided mindfulness
- Homework review
- Review cognitive defusion, contact with the present moment, values, and committed action
- Notice 5 things guided mindfulness

**Session 12**
- Completion of participant feedback survey
- Brief guided mindfulness
- Review self-as-context (the observing-self) and acceptance
- Reading resources given:
  - Chapter 32 *Onward and Upward*, Chapter 33 *A Meaningful Life*, and *Suggestions for Crisis Times* (Harris, 2007)
- Completion of follow-up permission form
- Completion of post-test measures
Table Q1

*Chi-Square Values and p-values for Measures Analyzed Using the Friedman Test*

<table>
<thead>
<tr>
<th>Measures</th>
<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASS 42 ($n = 6$)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>7.91</td>
<td>0.02*</td>
</tr>
<tr>
<td>Anxiety</td>
<td>4.73</td>
<td>0.05*</td>
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<tr>
<td>Stress</td>
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<td>0.003*</td>
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<tr>
<td>FFMQ ($n = 6$)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observing</td>
<td>0.74</td>
<td>0.34</td>
</tr>
<tr>
<td>Describing</td>
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<tr>
<td>Awareness</td>
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<tr>
<td>Non-judging</td>
<td>4.96</td>
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<tr>
<td>Non-reacting</td>
<td>9.33</td>
<td>0.005*</td>
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<tr>
<td>Total</td>
<td>7.00</td>
<td>0.02*</td>
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<tr>
<td>AAQ-II ($n = 6$)</td>
<td>3.74</td>
<td>0.08</td>
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*Note.* $^*p < 0.05.$
Table Q2

*Z*-scores and *p*-values for Measures Analyzed Using the Wilcoxon Signed Rank Test

<table>
<thead>
<tr>
<th>Measures</th>
<th>Pre-test to Post-test <em>(n = 7)</em></th>
<th>Post-test to Follow-up <em>(n = 6)</em></th>
<th>Pre-test to Follow-up <em>(n = 6)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>z</em></td>
<td><em>p</em></td>
<td><em>z</em></td>
</tr>
<tr>
<td><strong>DASS 42</strong></td>
<td></td>
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</tr>
<tr>
<td>Depression</td>
<td>-2.03</td>
<td>0.02*</td>
<td>-0.95</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-1.69</td>
<td>0.05</td>
<td>-1.84</td>
</tr>
<tr>
<td>Stress</td>
<td>-2.37</td>
<td>0.01*</td>
<td>-1.58</td>
</tr>
<tr>
<td><strong>FFMQ</strong></td>
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<td></td>
</tr>
<tr>
<td>Non-judging</td>
<td>-1.44</td>
<td>0.07</td>
<td>-1.63</td>
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<tr>
<td>Non-reacting</td>
<td>-2.37</td>
<td>0.01*</td>
<td>-0.74</td>
</tr>
<tr>
<td>Total</td>
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<td><strong>Caseworker Scale</strong></td>
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<td>Anxiety Symptoms</td>
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<td>-</td>
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<tr>
<td>Values Identification</td>
<td>-2.54</td>
<td>0.01*</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. Dashes (-) represent unavailable data.  
*p* < 0.05.
Table Q3

*Percentages of Improvement for all Measures*

<table>
<thead>
<tr>
<th>Measures</th>
<th>Pre-test to Post-test</th>
<th>Post-test to Follow-up</th>
<th>Pre-test to Follow-up</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>PCBT ((n = 2))</td>
<td>NCBT ((n = 5))</td>
<td>PCBT ((n = 2))</td>
</tr>
<tr>
<td>DASS 42</td>
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<tr>
<td>Depression</td>
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<td>59.74</td>
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<tr>
<td>Anxiety</td>
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<td>14.29</td>
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<td>Stress</td>
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<td>54.17</td>
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<td>FFMQ</td>
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<td>Observing</td>
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<td>16.54</td>
<td>-4.84</td>
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<tr>
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<td>20.00</td>
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<td>1.89</td>
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<td>Non-judging</td>
<td>9.26</td>
<td>38.26</td>
<td>15.25</td>
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<tr>
<td>Non-reacting</td>
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<tr>
<td>Total</td>
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<td>26.33</td>
<td>5.84</td>
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<tr>
<td>AAQ-II</td>
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<td>Goal Setting</td>
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<td>Values Identification</td>
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<td>-</td>
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</tbody>
</table>

*Note.* Dashes (-) represent unavailable data.
Table Q4

*Severity Levels of the DASS 42*

| Subscales | Pre-test |  | Post-test |  | Follow-up |  |
|-----------|----------|----------------------|----------|----------------------|----------|
|           | PCBT \(n = 3\) | NCBT \(n = 5\) | PCBT \(n = 2\) | NCBT \(n = 5\) | PCBT \(n = 2\) | NCBT \(n = 4\) |
| Depression| Severe | Moderate | Severe | Normal | Moderate | Normal |
| Anxiety   | Normal | Extremely Severe | Normal | Moderate | Normal | Normal |
| Stress    | Moderate | Moderate | Mild | Normal | Normal | Normal |
Appendix R

Supplementary Graphs

Figure R1. Mean scores for the DASS 42 for the PCBT group and the NCBT group.

Figure R2. Mean scores for the FFMQ for the PCBT group and the NCBT group.
Figure R3. Mean scores for the AAQ-II for the PCBT group and the NCBT group.

Figure R4. Mean scores for the caseworker rating scale for the PCBT group and the NCBT group.
Figure R5. Mean responses for the participant feedback form for the PCBT group and NCBT group.

Figure R6. Percentage of participants in the PCBT group and the NCBT group who reported changes in their routine at follow-up.
Figure R7. Mean responses for the usage of ACT skills since post-test for the PCBT group and NCBT group.