Acceptance and Commitment Therapy as an Effective Treatment for Comorbid Depression and Anxiety and the Transdiagnostic Factors

by

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Abstract

Depression and anxiety are highly prevalent and debilitating mental health concerns worldwide with high comorbidity rates that are linked to severe health problems and elevated mortality risks. The purpose of this literature review is to explore Acceptance and Commitment Therapy (ACT) as an effective treatment for comorbid depression and anxiety by examining its effects on the transdiagnostic factors of depression and anxiety: rumination, expressive suppression, avoidance. This paper presents evidence for the transdiagnostic factors, the effectiveness and

mechanisms of change in ACT, and techniques that have been shown to improve depression and anxiety. The paper will end with workshop recommendations. This review may be helpful for mental health professionals. By using ACT, professionals may incorporate a more effective treatment when working with clients struggling with both depression and anxiety.

Keywords: acceptance and commitment therapy, anxiety, comorbidity, depression, emotion regulation, psychological flexibility, transdiagnostic factors

Chapter One: Introduction

Depressive disorders and anxiety disorders are highly prevalent and debilitating disorders worldwide (Chisholm et al., 2016). The Global Burden of Disease project estimated a global loss of 12 billion days of productivity due to prevalent mental disorders such as major depressive disorders and anxiety disorders, which is associated with a loss of 925 billion dollars (USD) (Chisholm et al., 2016). A study reported a 49.86% increase in cases of depression from 1990 to 2017, as indicated by a surge from 172 million to 258 million cases (Liu et al., 2020). Global cases of anxiety disorders also showed an increase from 232 million in 2005 to 264 million in 2015, marked by a 14.9% increase (World Health Organization, 2017). The lifetime prevalence is estimated to be 19% for depressive disorders and 29% for anxiety disorders, with high comorbidity rates of 40-80% between these two disorders (Kessler et al., 2005). Comorbidity in psychology refers to the presence of one or more mental disorders, which is common between depression and anxiety disorders (Saha et al., 2020). For instance, a study reported that 57.5% of participants with a diagnosis of major depression also met criteria for one or more anxiety disorders (Kessler et al., 2007). Another epidemiological study concluded that 59.1% of individuals with Generalized Anxiety Disorder (GAD) met criteria for major depression (Carter et al., 2001).

This has serious implications as comorbid anxiety and depression are associated with more severe health outcomes, longer treatment time, frequency in recurrences, and increased suicidal attempts (Andreescue et al., 2018; Kun et al., 2019; Yongjie et al., 2021). Studies have found that comorbid anxiety and depression are associated with a significantly elevated mortality risk (Meier et al., 2016). A meta-analysis found that individuals with mental disorders have a 2.22 times higher mortality rate compared to the larger population and those without mental

disorders, with mortality often caused by cardiovascular disease, chronic diseases, infections, and suicide (Walker et al., 2015). These findings highlight the severity of comorbid anxiety and depression that requires immediate attention.

Statement of the Problem

Due to the prevalence, expensive costs, and adverse outcomes of the comorbidity, there has been a surge in interest in transdiagnostic treatments for depression and anxiety (Crask, 2012; Farchione et al., 2012; Newby et al., 2015). Transdiagnostic treatments address the fundamental processes that underlie various presentations of mental disorder symptoms, such as temperamental, cognitive, behavioral, and emotional processes (Bell et al., 2015). Researchers have argued that there are transdiagnostic factors that give rise to the high comorbidity rates (Andrews et al., 2002; Goldberg et al., 1987). A structural modelling study indicated that comparable genetic, environmental, and temperamental factors such as negative affectivity and neuroticism underpin depression and anxiety disorders (Andrews et al., 2009). Poor decision-making and impaired volitional control over cognition, behaviours, and emotions, distorted perceptions of events, and deficits in emotion regulation are also the commonalities between depressive and anxiety disorders (Conway, 2016; Goschke, 2014; Lukas, 2018). In addition, preliminary data found amygdala hyperactivity in response to threat in both anxiety and depression (Craske et al., 2009). Another recent literature review concluded that depression and anxiety disorders often occur in comorbidity, with anxiety preceding depression (Galyamina, 2017). The author further stated that the disorders had different symptom presentations that stemmed from a shared cause, and that the shared commonalities led to a diagnosis of both disorders in the same individual (Galyamina, 2017). Therefore, disorder-specific treatments may

not be sufficient in treatment of comorbid depression and anxiety as these disorders are often present together (Bell, 2016).

Historically, strong empirical evidence has shown cognitive behavioural therapy (CBT) to be one of the most effective psychological treatments for depression and anxiety disorders (Hofmann et al., 2012). However, the majority of the evidence on its effectiveness has been found on disorder-specific cognitive behavioural therapy that targets depression and anxiety individually (NICE, 2011). While studies have indicated that disorder-specific treatments can result in positive changes in comorbid disorders (Allen et al., 2005; Brown et al., 1995), most patients still fulfill the criteria for the comorbid disorder at the end of treatment (Allen et al., 2005; Tsao et al., 2002). Brown et al. 's (1995) study on 126 patients indicated an initial reduction in comorbidity after panic disorder treatment, with around 33% of patients showing relapse at 2 years post-treatment. Thus, there are several limitations to disorder-specific treatment models. The proliferation of multiple treatments for the same disorder has resulted in the difficulty for clinicians to choose from the various treatment manuals with little differences between them (Wilamowska et al., 2010). As evidenced by these old studies, comorbid disorders may require a different approach, which the research in the last 20 years has yet to suggest otherwise. In the case of comorbidity, the question regarding which disorder to treat first and whether disorder-specific treatments should be offered to both disorders remain unanswered (Bell, 2016). In real-life practice, clinicians may not acquire proper training and supervision in each model, with additional challenges in implementing numerous treatments given the limited number of sessions due to funding restrictions (Bell, 2016). These concerns have led to poor implementation of evidence-based practice in mental health care (Bell, 2016). In a similar vein, studies have shown that treatment adherence and completion are the barriers to quality treatment

and outcome. A meta-analysis of 125 studies on psychotherapy dropout reported that 50% of patients prematurely terminated their sessions, while 40% of patients dropped out after the first or second session (Peknanik & Wierzbicki, 1993). Therefore, delivering multiple disorder-specific treatments that require a longer period of time may be ineffective, as clients expect substantially briefer counselling than their counsellors (Peknanik & Wierzbicki, 1986).

Transdiagnostic treatments, on the other hand, are evidence-based practices that are more easily disseminated (Craske, 2012). Training clinicians in one approach rather than various approaches for different disorders may be easier (Barlow et al., 2004). Following an increased recognition of the importance of a unified, transdiagnostic approach, acceptance and commitment therapy (ACT) emerged as an evidence-based transdiagnostic approach for treatment of comorbid anxiety and depression that addresses multiple concerns of disorder-specific treatments (Dindo et al., 2017). Dindo et al. (2017) noted that because ACT focuses on increasing psychological flexibility, it can be applied to any aversive internal experience, resulting in a transdiagnostic approach for treating various psychological difficulties. As a result, ACT can be integrated into various treatment plans and flexibly delivered. While ACT does not focus on symptom reduction, research has shown that symptom reduction occurs as a by-product of accepting aversive internal experience and committing to value-aligned behaviours which are the foundation aspects of ACT (Dimidjian et al., 2016).

Purpose of the Paper

Numerous studies have reported improvements in comorbid depression and anxiety following ACT interventions (Davoudi et al., 2017; Gregoire et al., 2017; Twohig & Levin, 2017). However, little research has explained the effectiveness of ACT by discussing how ACT can be used to address the transdiagnostic factors of depression and anxiety. Therefore, the

purpose of this paper is to review current literature on the transdiagnostic factors of depression and anxiety, and the effectiveness of ACT in addressing these factors to improve comorbid depression and anxiety. This literature review aims to provide clarity on the common etiologies of depression and anxiety and bring attention to the importance of addressing depression and anxiety disorders using a transdiagnostic approach due to their high rates of comorbidity. In addition, the goal is to provide important information on the mechanism and efficacy of ACT. This review may be helpful for mental health professionals. By using ACT, professionals may incorporate a more effective treatment when working with clients struggling with both depression and anxiety.

Thesis Statement

This capstone project explores the effectiveness of ACT in the treatment of comorbid depression and anxiety by examining its effectiveness on the transdiagnostic factors. This paper also highlights the crucial role of psychological flexibility in promoting positive clinical outcomes.

Self-Positioning Statement

I present this literature review from the social location of a young, educated, female, heterosexual, second-generation Taiwanese immigrant. Coming from a Buddhist background, ACT deeply resonated with me with its integration of mindfulness techniques and the belief of human suffering that is central to the therapy. I appreciated how ACT translated a spiritual concept into an evidence-based practice to alleviate the pain that humans inevitably experience. While I aim to deliver this review in an impartial manner, I acknowledge that my cultural and religious background may lend a biased lens in my understanding of the research, thus impacting my interpretation of the findings.

My involvement in the mental health field in various capacities have shown me the complexity and difficulty of navigating the interweaving web of human thoughts, emotions, and behaviours. I have borne witness to the hopes and despair inherent in the struggle, and the ways the struggle often kept people in a fixed, dark place. As a result, depression and anxiety were often bound to emerge. This observation made me wonder about the ways we may better untangle from the endless struggle with life experiences. I had some inkling of an idea that mindfulness would be helpful. However, before learning about ACT, my understanding of mindfulness was limited to being self-attuned and acquiring a peace of mind. After learning about ACT, I learnt that we could use mindfulness to untangle us from negative experiences, which allows us to take value-guided action.

This understanding sparked curiosity and passion in me to dive into the research on ACT and explore the ways ACT can be effective in dealing with everyday stresses, such as depression and anxiety. In the fast-paced world that we live in, we are taught to respond and react rapidly in order to be time-efficient and productive. However, when we engage with ourselves in this manner, we often respond in maladaptive ways. It is my hope that this paper sheds light on the importance of using a transdiagnostic treatment and its constituents by exploring the mechanism and efficacy of ACT. By doing so, I hope to also contribute to our knowledge of our fundamental psychological functioning and the effective techniques that we can adapt to untangle from depression and anxiety.

Definition of Terms

Acceptance and Commitment Therapy

ACT created by Steven C. Hayes in the 1980s is a third-wave behavioral therapy that incorporates third wave methods such as mindfulness, acceptance, values, metacognition, and

spirituality (Hayes & Hofmann, 2017). ACT bases its premise on the understanding that human suffering is an inevitable part of human life (Hayes et al., 1999). With this understanding, instead of attempting to reduce painful experiences, ACT emphasizes accepting painful experiences and behaving in value-aligned ways to create a meaningful life even in the face of human suffering. Reducing experiential avoidance and increasing psychological flexibility are the main goals of ACT, which is cultivated through enhancing the six core processes that will be further discussed in chapter two.

Anxiety

Anxiety is an adaptive response that can alert humans of the danger in the environment. However, anxiety that is strong and long-lasting can become debilitating and interfere with the ordinary functioning of life. People with anxiety disorders experience "long periods of intense feelings of fear or distress out of proportion to real events" as their brains perceive the events to be disproportionately more threatening than the actual threat (Government of Canada, 2009, para 3). Some of the physical symptoms associated with anxiety are trembling, muscle tension, shortness of breath, and dizziness (Government of Canada, 2009). In Canada, an estimated 1 in 10 Canadians experiences anxiety disorders. Anxiety disorders encompass generalized anxiety disorder, panic disorder, social anxiety disorder, specific phobias, and separation anxiety disorder. In this literature review, anxiety is used to refer to different types of anxiety disorders as well as the symptoms of anxiety.

Depression

According to the Canadian Psychological Association, depression may involve "sadness, loss of interest in usual activities, changes in appetite, changes in sleep, changes in sexual desire, difficulties in concentration, a decrease in activities or social withdrawal, increased self-criticism

or reproach, and thoughts of, or actual plans related to suicide" (Canadian Psychological Association, 2021, para 2). In Canada, approximately 11% of men and 16% of women will experience major depression over their lifespan (Government of Canada, 2009). There are several types of depression, such as major depressive disorder (MDD), bipolar disorder, perinatal and postpartum depression, persistent depressive disorder (PDD), premenstrual dysphoric disorder, psychotic depression, and seasonal affective disorder. For the purposes of this paper, depression is used to refer to different types of depressive disorders as well as the symptoms of depression.

Transdiagnostic Factors

Transdiagnostic factors are vulnerability factors that not only overlap multiple disorders, but also reflect the common etiology and contribute to the maintenance of the disorders (Egan et al., 2011). Transdiagnostic factors may be the clinical characteristics of disorders that also explain comorbidity (Kessel et al., 2016). Thus, treatments that target transdiagnostic factors may contribute to the improvement of symptoms across multiple disorders, thus enhancing treatment effectiveness and practicality (Kruger & Eaton, 2015). This literature review will review findings on the transdiagnostic factors of depression and anxiety.

Transdiagnostic Treatments

Transdiagnostic treatments are evidence-based practices that address the fundamental processes that underlie various presentations of mental disorder symptoms, such as temperamental, cognitive, behavioral, and emotional processes (Bell et al., 2015). They "apply the same underlying treatment principles across mental disorders, without tailoring the protocol to specific diagnoses" (McEvoy et al., 2009, p.21). Transdiagnostic treatments have been shown to reduce treatment time and cost, simplify training, and increase delivery flexibility (Barlow et

al., 2016; Leichsenring & Steinert, 2018). This literature review will examine ACT, a transdiagnostic treatment that has shown effectiveness with depression and anxiety.

Outline of the Paper

Chapter one provided an introduction as well as a rationale for why it is imperative to take a transdiagnostic approach in understanding and treating depression and anxiety due to their high comorbidity rates. Statistics on comorbid depression and anxiety, and the costs and losses of such comorbidity were discussed. The introduction presented the statement of the problem that highlighted the importance of using a transdiagnostic treatment and proposed ACT as an effective treatment due to its targeting the transdiagnostic factors. In chapter two, current literature on the transdiagnostic factors of depression and anxiety will be discussed. A review of important literature on the effectiveness of ACT in the treatment of the transdiagnostic factors, its mechanisms of change, and alternative delivery methods of ACT will be presented. Chapter three presents a workshop recommendation that aims to integrate the findings summarized by this review. The workshop will include research findings on the transdiagnostic factors of depression and anxiety to support clients to understand that certain practices may contribute to various forms of their psychological distress. The workshop will further provide clients with psychoeducation and experiential exercises to enhance their understanding and skills in applying the techniques of ACT to help them address depression and anxiety.

Chapter 2: Literature Review

This chapter serves several purposes. The first aim is to review the transdiagnostic factors that contribute to the onset and development of depression and anxiety by discussing emotion regulation deficits and how the deficits underlie rumination, expressive suppression, and avoidance. Subsequently, the concept and techniques of ACT as well as the mechanisms of change that contribute to the changes in both depression and anxiety will be discussed. Lastly, this chapter will review the effectiveness of the alternative delivery formats of ACT, such as group and online ACT interventions, in the treatment of depression and anxiety.

Transdiagnostic Factors of Depression and Anxiety

What is Emotion Regulation?

Emotion regulation (ER) has been defined as how one forms, influences, and expresses emotions (Gross, 1998). According to Gross (2013), ER refers to the ways by which people attempt to track, appraise, and modify their emotions to align with their needs and goals. ER includes magnifying and diminishing both positive and negative emotions, as determined by one's personal goals (Gross, 2015; McRae & Gross, 2020). In addition, emotion regulation can occur through an automatic and/or controlled process using implicit and/or explicit strategies (Braunstein et al., 2017), with implicit ER requiring less effort and explicit ER requiring intentional effort.

Gross (2013) highlighted the three core features of emotion regulation: the formation of a goal to change the emotional experience, the use of various strategies to regulate emotions, and the effect of emotions on the display of emotions (e.g., intensity, duration, behavioral and psychological experiences) (Thompson, 1990, as cited in Gross 2013). To date, the process model of emotion regulation has suggested a framework for understanding the process through

which emotions are formed and how they can be regulated (Gross, 1998). The model posits that emotions are formed through a temporal sequence of processes: situation, attention, appraisal, and response. The individual begins the process by being in a situation, focusing on the situation, appraising the situation based on personal needs, goals, and biases, and generating an emotional response. The emotional response subsequently reshapes the situation and restarts the process. Corresponding to these processes are five points at which individuals can engage in emotional regulation: situation selection, situation modification, attention deployment, cognitive change, and response modulation. Situation selection refers to the attempt to achieve emotion regulation by choosing to enter or avoid a situation. In lieu of the selection, the individual may attempt at situation modification by changing the environment to fit the emotional needs and goals. Attentional deployment entails the attribution of attention (e.g., concentrating or distracting) to regulate emotions. Cognitive change involves the effort to regulate emotions by changing one's appraisal of the emotion. Lastly, response modulation reflects intentionally altering one's physiological or behavioural response. The effectiveness of these strategies varies depending on the contextual influences and the individual's use of these skills.

Berking proposed a model of adaptive coping with emotions (ACE) that highlights nine emotion-regulation skills that are integral to adaptive emotion regulation (Berking, 2008; Berking, 2014). Berking concluded that the following skills are important: the abilities to a) be aware of emotions; b) identify and label emotions; c) interpret bodily sensations in response to emotions with accuracy; d) understand the prompts of emotions; e) emotionally support oneself through distress; f) actively modify negative emotions to feel better; g) accept emotions; h) tolerate negative emotions; i) confront distressing situations to attain important goals. This model

upholds that the ability to modify emotions in accordance with the goal and to tolerate distressing emotions are significant for mental health.

Research has shown that deficits in emotion regulation skills may contribute to various forms of psychopathology, as they may be linked to the development and maintenance of distressing emotions which, at severe levels, can lead to diagnoses of mental disorders (Casey et al., 2013). Sheppes et al. (2015) proposed the extended process model that discusses maladaptive ER strategies that can increase the risk of psychopathology. Deficits in emotion regulation can also increase the propensity of individuals to engage in dysfunctional strategies to cope with negative emotions such as substance use (Weiss et al., 2022), disordered eating (Muehlenkamp et al., 2012), and self-harm behaviours (Kranzler et al., 2016). The maintenance of negative emotions and maladaptive ER strategies can escalate into emotion dysregulation, which has been defined as the inability to manage negative emotions due to the intensity and length of time, coupled by difficulty in down-regulating negative emotions (Franco, 2018). Individuals with emotional dysregulation tend to respond to emotion-provoking situations in a way that is out of proportion to the situation. Compared to the average person, they require longer time to recover from negative to neutral emotional states.

Emotion Regulation Deficits in Depression and Anxiety

Studies have indicated that individuals struggling with depression and anxiety exhibit ER deficits. Joorman and Stanton (2016) summarized in their review that depression is linked to more frequent use of maladaptive strategies and diminished ability to implement adaptive strategies. For instance, compared to healthy controls, individuals with depression often experienced difficulties in naming and labelling emotions, enduring distressing emotions, treating themselves with compassion amidst the suffering, and successfully improving negative

emotional states. In a similar vein, studies have highlighted the association between ER deficits and a wide range of anxiety disorders (Cisler et al., 2010). For instance, difficulties in understanding and naming emotions as well as using effective coping strategies have been identified in individuals with panic disorder, generalized anxiety disorder and those with social phobia (Cox et al., 1995; Mennin et al., 2005; Turk et al., 2005). Avoidance, rumination, and catastrophizing are also common behaviours observed in individuals with social phobia and specific phobias (Kraaij et al., 2003; Turk et al., 2005). Extending the existing correlational studies, some studies have suggested a causal relationship between ER deficits and depression and anxiety by manipulating ER and comparing both clinical and non-clinical individuals; the results of the studies showed that clinical individuals who were instructed to use maladaptive ER strategies (e.g. rumination, expressive suppression, avoidance) experienced more difficulty while attempting to overcome the negative emotional state (Campbell-Sills et al., 2006; Liverant et al., 2008).

Rumination has been increasingly researched as the underlying factor of depression and anxiety. McLaughlin and Nolen-Hoeksema (2011) reported the findings that a significant proportion of comorbidity between depression and anxiety in both adolescents and adults were explained by rumination, suggesting rumination as a transdiagnostic factor. A more recent study by Johnson et al. (2016) found that rumination had a significant association with depression and anxiety, also suggesting the transdiagnostic nature of rumination.

Expressive suppression is a construct that has emerged from the literature as another important transdiagnostic factor. Hosogoshi et al. (2020) revealed their findings that expressive suppression moderates anxiety in patients with comorbid anxiety and depressive disorders. They emphasized that interventions targeting expressive suppression may increase the efficacy of a

transdiagnostic treatment. In support of this finding, Barrio-Martinez et al. (2022) reported that expressive suppression significantly moderated the relationship between treatment administration and outcomes of anxiety and depressive symptoms and quality of life.

Fernandez et al. (2018) also proposed experiential avoidance as a transdiagnostic element of emotional distress among individuals with depression and anxiety. They reported that higher levels of experiential avoidance were associated with higher emotional distress, and that emotional distress was related to fewer goals, positive environmental reinforcement, and avoidance of aversive cognitive and emotional experiences.

These findings seem to suggest that rumination, expressive suppression, and avoidance are the correlates of emotion regulation deficits and important transdiagnostic factors of depression and anxiety.

Rumination and Depression

Rumination has been identified as a maladaptive emotion-regulation strategy that involves a passive process of thinking repetitively about the causes, consequences, and meaning of a negative emotional state (Nolen-Hoeksema, 1991). Rumination denotes recurring thoughts and ideas rather than the negative content of these thoughts and ideas (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 2008). Individuals with depression tend to engage in more rumination than positive reappraisal than individuals without depression (Aldao et al., 2010). During the process of rumination, the individual responds to negative emotional states with repetitive negative thoughts and ideas, which can exacerbate symptoms and episodes of depression by increasing the individual's vulnerability (Nolen-Hoeksema et al., 1993). It has also been associated with increased risks for the onset of depression, recurring depressive episodes, and the perpetuation of negative affect (Nolen-Hoeksema, 2000). Therefore, rumination has been

considered as a maladaptive emotion regulation strategy that prevents recovery from negative emotional states (Nolen-Hoeksema et al., 2008). In line with these findings, recent research showed evidence that rumination had a negative influence on depression. Drawing from a longitudinal study of 661 adolescents, Hosseinichimeh et al. (2018) presented a model of depression that showed that rumination lengthened the memory time for stressors and prolonged the effect of stressors, which directly impacted depressive symptoms; consequently, the prolonged stressors and the ongoing depressive symptoms contributed to rumination (Hosseinichimeh et al., 2018).

However, Treynor et al. (2003) conceptualized rumination into two types: brooding and reflection. Brooding was considered to have a more debilitating effect that was characterized by a passive comparison of oneself with an unachieved desire, while reflection echoed an active problem-solving cognitive process that aimed to improve one's situation (Treynor et al., 2003). Their longitudinal analyses showed that brooding was linked to more immediate and long-term depression one year later. However, their results showed that while reflection was linked to more immediate depression, it was associated with less depression over time as it allows for problem solving. In support of this notion, Everaert et al. (2017) reported findings on a positive correlation between brooding and the severity of depression and suggested that individuals with depression may have the habit of using brooding rather than positive appraisal. Their results provided evidence that cognitive biases had an indirect effect on depressive symptoms through the use of brooding and the lack of use of more adaptive strategies. Similarly, Zareian et al. (2021) compared brooding and reflection and found that brooding was associated with higher levels of negative emotion. Therefore, research appears to have differentiated the effects of

brooding from reflection, both of which are rumination styles. Rumination in the style of brooding appears to lead to more negative effects.

Rumination and Anxiety

While the association between rumination and depression has been well established, a growing body of research suggests that rumination may also contribute to the development of anxiety symptoms. Research has discovered anxiety to be positively associated with rumination (Grant & Beck, 2010). For instance, individuals with social anxiety disorder (SAD) experience intense fear or anxiety towards social situations out of fear of being negatively judged by others (Canadian Psychological Association, 2020). SAD is characterized by rumination in the form of negative self-judgment. Research has shed light on evidence of increased rumination in individuals prior to and following social situations (Modini & Abbott, 2017); these are termed pre-event and post-event rumination, which are proposed to be the elements that perpetuate the cycle of social anxiety (Modini & Abbott, 2016). Individuals with SAD often ruminate on negative images and performances of oneself, and the appearance of anxiety that may be scrutinized and negatively evaluated by others (Moscovitch et al., 2013). Post-event rumination has emerged from findings as having the effect of prolonging and enhancing anxiety in a social situation (Wong & Moulds, 2009). In a study on depression and social anxiety disorder, the results indicated a strong relationship between rumination and anxiety in individuals with SAD. The study also suggested that rumination contributed to the maintenance of depression and anxiety (D'avanzato et al., 2013). The association between rumination and Generalized Anxiety Disorder (GAD), an anxiety disorder that is characterized by chronic and persistent worry and accompanied by other psychological and physiological symptoms, has also been examined (Canadian Psychological Association, 2021). Ruscio et al. (2015) reported that the ruminative

style of response to stress was associated with more severe symptoms of Generalized Anxiety Disorder (GAD), and that individuals with GAD showed ruminative responses similar to those with depression. Another form of anxiety disorder that has been increasingly investigated is obsessive-compulsive disorder (OCD) which is characterized by intrusive and repetitive thoughts or images that evoke distress and behaviours that aim to reduce the anxiety (Canadian Psychological Association, 2013). A number of studies revealed a positive association between rumination and OCD symptoms in student samples (Grisham & Williams, 2009; Wahl, Ertle et al., 2011). Rumination has further been found to contribute to the maintenance of unwanted intrusive thoughts in OCD (Kollarik et al., 2020).

In Olatunji et al.'s (2013) multimodal meta-analysis, the results suggested that rumination is presented in depression and anxiety in different ways. For example, while rumination contributes to the low mood in depression, it predicts heightened physiological response in anxiety (Olatunji et al., 2013). For instance, physiological responses such as nervous body language, somatic complaints, and rumination are often found in anxiety (Seligman, 2000). The review suggests that although rumination is associated with the negative emotion that underlies both depression and anxiety, rumination has different presentations depending on the disorder (Olatunji et al., 2013). The authors further highlighted that rumination was significantly associated with depression even when controlling for anxiety symptoms; likewise, rumination was significantly associated with anxiety when controlling for depressive symptoms. The findings provide evidence for rumination as a transdiagnostic factor.

Expressive Suppression and Depression

Expressive suppression (ES) is a construct that has been proposed as another maladaptive emotion regulation strategy (Dryman & Heimberg, 2018; Gross 1998). ES is defined by the

conscious or subconscious attempt to alter emotional experiences by suppressing their overt expression of emotions (Gross, 1998). More frequent use of ES as opposed to reappraisal has been shown to predict increased depressive symptoms (Moore et al., 2008). A recent meta-analysis found that individuals who use suppression tend to experience increased depressed mood and fatigue, and decreased self-esteem and life satisfaction (Cameron & Overall, 2018). They also experience interpersonal difficulties as they tend to have more subjective experience of less acceptance and more withdrawal from others, and less relationship satisfaction (Cameron & Overall, 2018). On the contrary, individuals who use emotional expression in their interactions with others report not only feeling more accepted and less distanced by others, but also experience greater relationship satisfaction and higher self-esteem over time (Cameron & Overall, 2018). Research has also compared the effects of ES on negative emotions between non-clinical and clinical samples. Boland et al. (2019) experimentally tested the effects of ES on separate emotions, sadness and anxiety, in individuals with no to minimal depressive symptoms and those with mild to severe depressive symptoms that received professional treatment. The results indicated that ES did not have an observable effect on sadness in both non-depressed and depressed participants. However, ES was successful in decreasing anxiety for non-depressed participants. Therefore, in alignment with previous research, the study suggested that ES may be an effective short-term strategy for non-depressed individuals. On the contrary, depressed participants showed no effect of ES on anxiety. As a result, Boland et al. (2019) proposed the notion that the effects of ES may vary depending on the combination of the emotion that the individual is trying to suppress and the individual's level of depression. Their findings indicated that depressed individuals may have difficulty mitigating certain emotions (Boland et al., 2019).

Expressive Suppression and Anxiety

Numerous research studies have further investigated the relationship between expressive suppression (ES) and anxiety. Studies have found an increased propensity to utilize ES in individuals with SAD, GAD, panic disorder (Tull & Roemer, 2007), and PTSD (Moore et al., 2008). Dryman and Heimberg (2019) documented in their literature review that individuals with SAD showed a greater tendency in using ES in response to both positive and negative emotions as they tend to perceive negative emotions as intolerable, unchangeable, and rejection-eliciting in social settings. The suppression of the expression of positive emotions is particularly maladaptive as it can perpetuate the low positive affect associated with anxiety, which may contribute to the development of depression (Dryman & Heimberg, 2019). Similarly, findings by Deplancke et al. (2022) showed that beliefs in the uncontrollability of emotions were associated with increased use of ES, which contributed to the increase in anxiety and depressive symptoms. Previous research has found that suppression was ineffective in reducing emotional distress (Campbell-Sills et al., 2006); in fact, participants who were instructed to use suppression after watching a distress-evoking film showed increased heart rates compared to participants who used acceptance (Campbell-Sills et al., 2006). However, using functional magnetic resonance imaging, Ellard et al. (2017) reported in a more recent study on GAD that ES lead to a successful downregulation of the amygdala during regulation, as shown in the lowest ratings of distress in their participants as compared to the other groups that used emotional acceptance and worry. Their data indicated that ES was associated with greater interoception, or the perception of sensations from inside the body, and greater avoidance of distress-evoking stimuli; therefore, Ellard et al. (2017) suggested that while ES may help mitigate subjective distress, it may be a maladaptive strategy as it perpetuates avoidance for individuals with GAD.

Findings suggest that individuals with anxiety may use ES to downregulate both positive and negative emotions out of fear of the uncontrollability of emotions. ES has been shown to be an ineffective strategy for regulating anxiety; while it may help reduce subjective distress, its maintenance of avoidance in individuals is associated with increased symptoms of anxiety as well as depression.

Avoidance and Depression

Fester's (1973) functional analytic theory of depression proposed that depressed individuals frequently engage in behaviours that are characterized by avoidance in order to escape from undesirable stimuli. Fester stressed that complaining, withdrawing, and asking for help are the common behavioural repertoire observed in individuals with depression, which can serve to alleviate distress while preventing behaviours of positive reinforcement. Fester indicated that behaviours that aim to avoid or escape from distress may contribute to the passivity of the depressed person who tends to take less initiative and action. In addition, he highlighted that it is often the context of the depressed individuals' lives that prevent them from participating in the activities that they avoid rather than their capabilities, as they often have the skills to carry out those activities. Holahan et al. (2005) conducted a ten-year longitudinal study investigating the relationship between avoidant coping styles, stress, and depression. Their study reported that baseline avoidance coping predicted more life stressors four years later and depressive symptoms ten years later. In support of Fester's notion, Trew (2011) reported in her review that avoidance may reduce positive reinforcement and contribute to biases in negative information processing, which can aggravate problems. Joormann and Vanderlind (2014) conducted a meta-analysis in which they examined the effects of cognitive biases on affect regulation in depression. The authors found that depressed individuals tend to avoid intense negative emotions as well as

intense positive emotions and have difficulties recovering from negative emotions using positive memories. The authors suggested that attentional avoidance of positive emotions may contribute to the challenges in upregulating positive emotions and downregulating negative emotions. These findings provide evidence that avoidance may underlie the development and maintenance of depression.

Avoidance and Anxiety

Avoidance is a transdiagnostic symptom that underlies anxiety disorders (Craske et al., 2017). The avoidant behaviours of anxious individuals are often at the core of their impairment, as shown through the inability to engage in day-to-day activities, such as talking to others, leaving the house, or dealing with daily stresses (Craske et al., 2017). Anxiety disorders are marked by avoidant behaviours that can greatly impact the person's life; for instance, individuals who struggle with SAD often avoid social situations or making eye contact with others (American Psychiatric Association, 2013), while individuals with specific phobias avoid and/or endure fear-inducing stimuli with great distress (e.g., heights, animals). Rudaz et al. (2017) found different effects of avoidance behaviour on SAD and specific phobias. Their results indicated that high avoidance behaviour in women with a specific phobia at baseline increased the level of general anxiety at follow-up. However, high avoidance behaviour showed no observable moderating effect in women with SAD. This difference was explained by the authors as possibly due to the fact that social situations are harder to avoid compared to specific phobias (e.g., spiders), and that individuals with specific phobias may have more positive experiences after approaching their fears. Avoidance has also been given particular attention in the literature on GAD. Roemer et al. (2005) reviewed findings from clinical and non-clinical participants and reported that individuals with GAD have an increased tendency to attempt to avoid or control

internal experiences, and an increased fear of losing emotional control. Newman and Llera (2011) presented the contrast avoidance model of worry, which purports that individuals with GAD have higher sensitivity to emotional vulnerabilities in the face of negative events and utilize worry to maintain a negative emotional state in order to avoid future increase in distress. Therefore, avoidance seems to play a fundamental role in the development and maintenance of anxiety disorders.

Overview of ACT

ACT created by Steven C. Hayes in the 1980s is a third-wave behavioral therapy that incorporates third wave methods such as mindfulness, acceptance, values, metacognition, and spirituality (Hayes & Hofmann, 2017). ACT bases its premise on the understanding that human suffering is an inevitable part of human life (Hayes et al., 1999). With this understanding, ACT emphasizes accepting painful experiences and behaving in value-aligned ways to create a meaningful life even in the face of human suffering.

Experiential Avoidance

The ACT model views experiential avoidance (EA), a term used to describe the act of avoiding, controlling, or suppressing negative private experiences, as the main cause of psychological distress and dysfunction. More specifically, EA refers to the unwillingness to remain in contact with negative private experiences that can manifest in bodily sensations, emotions, thoughts, memories, and behavioral predispositions, and attempts to avoid, control, or suppress the negative events through action (Hayes et al., 1996). While EA can provide temporary relief from aversive experiences, EA often increases the frequency and intensity of the aversive experiences that one tries to avoid (Barlow et al., 2004). The preoccupation with

unwanted private experiences "hooks" one in and impedes one from moving toward desired qualities and values, resulting in maladaptive functioning (Hayes et al., 1999).

Rather than attempting to eliminate negative experiences, ACT aims to increase psychological flexibility by applying acceptance, mindfulness, and behavioral strategies to achieve the pursuit of a value-guided life in the face of negative experiences.

Psychological Flexibility and the Six Core Processes

The core therapeutic intervention in ACT is to increase psychological flexibility, or the ability of a person to continue or adopt new behaviors that are in alignment with the person's values in a given context (Hayes et al., 2011). Psychological flexibility is the process of how well a person "adapts to fluctuating situational demands, reconfigures mental resources, shifts perspective, and balances competing desires, needs, and life domains" (Kashdan & Rottenberg, 2010, p.2).

Psychological flexibility is cultivated by working on the six core processes of ACT: acceptance, defusion, present moment, self-as-context, values, and commitment (Hayes et al., 2006). Acceptance refers to a willingness and openness to one's positive and negative experiences without judgment; defusion is defined as bringing awareness to and detaching from experiences to create space for better flexibility and choice; present moment indicates being in touch with the here-and-now to function better in everyday life as well as to gain insight into personal behaviours; self-as-context encourages people to separate themselves from their private experiences and view themselves and not the content as a consistent being; values refer to what are important to a person; commitment stands for behaving in alignment with the person's values (Gordon et al., 2017). These six core processes are independent yet interrelated constructs. Improvements in these processes indicate an improvement in psychological flexibility.

Differing from CBT approaches that challenge the validity of thoughts, ACT focuses on the "workability" of one's thoughts and behaviours, or whether one's thoughts and behaviours are moving one towards a desired life. While ACT does not focus on symptom reduction, symptom reduction often occurs as a by-product of ACT interventions. The goal of ACT is to create a rich and meaningful life through acceptance and committed actions (Hayes et al., 2006).

Application of ACT to Anxiety and Depression

Studies have shown that experiential avoidance (EA), which ACT views as the main cause of psychological distress and dysfunction, is strongly related to various forms of psychopathology, including anxiety and depression (Chawla & Ostafin 2007; Hayes et al. 1996). Recent findings from Barlow and Kennedy (2016) posited that neuroticism underlies anxiety and mood disorders, and that those high on neuroticism share the tendency to have strong negative emotional reactions to negative emotions and to label emotional experiences as aversive. Individuals showing this pattern may be more prone to engage in EA in the face of negative experiences, which may exacerbate their negative emotions (Spinhoven et al., 2017). Indeed, rumination, expressive suppression, and avoidance, the three prominent transdiagnostic factors of anxiety and depression seem to stem from experiential avoidance. From the ACT perspective, rumination occurs when someone is "hooked" by their thoughts and feelings (Hayes et al., 1999). Rumination has been considered as an avoidant response to coping with undesirable emotions (Gemille et al., 2006; Nolen-Hoeksema et al., 2008). Gemille et al. (2006) suggested that rumination may allow people to avoid the discomfort of taking initiative and the aversive emotions associated with thoughts through reduced thought concreteness. Therefore, in applying the concepts of ACT to depression and anxiety, EA may underlie the common etiology of

depression and anxiety as individuals are motivated by the desire to avoid and eliminate aversive experiences, leading them to engage in rumination, expressive suppression, and avoidance.

However, EA has not been established as an independent risk factor for depressive disorders. While EA was found to be predictive of depressive disorders in terms of its onset, relapse, and maintenance, EA showed no significant association with the onset, relapse, and maintenance of depressive disorders after controlling for neuroticism, rumination, and worry (Spinhoven et al., 2016). Instead, the findings revealed a significant positive association between EA and neuroticism, rumination, and worry which are related to anxiety and depression (Hong & Cheung, 2015; Nolen-Hoeksema et al., 2008).

ACT aims to increase psychological flexibility through enhancing the six core principles (Hayes, 2006). Psychological flexibility has been shown to be a significant predictor of several mental health indicators, such as anxiety, depression, and occupational performance and satisfaction (for a review, see Kashdan & Rottenberf, 2010). These findings are supplemented by both clinical and non-clinical studies showing that psychological flexibility is related to well-being (McAteer & Gillanders, 2019; Steenhaut et al., 2018). In particular, the impact of ACT on psychological flexibility and experiential avoidance partially or fully explains the positive clinical outcomes (Hayes et al., 2006). Studies have reported that individuals with greater psychological flexibility show greater pain tolerance and endurance, the two main aspects of distress tolerance (Feldner et al., 2006). Kashdan and Rottenberf (2010) contended that a lack of psychological flexibility also characterizes depression and anxiety in numerous ways. The authors argue that the repetitive thinking patterns and fixed behaviours in rumination are associated with low psychological flexibility. They further highlighted that socially and emotionally, individuals with depression often show flat affects and a limited range of emotions

that are inflexible. In addition, the authors identified psychological inflexibility associated with anxiety disorders through the inflexible responses to the fear or anxiety of strong negative emotions or bodily sensations. Likewise, individuals with anxiety often respond in inflexible ways, such as excessive worry or repetitive behaviours. The authors concluded that EA plays a significant role in the maintenance of the disorder. In summary, these findings seem to highlight that psychological flexibility is critical to understanding depression and anxiety. As a therapy that targets psychological flexibility, ACT may present an effective treatment for comorbid depression and anxiety disorders by targeting the transdiagnostic factors that underlie both depression and anxiety.

Effectiveness of ACT on Anxiety and Depression

Extensive research has found evidence for the effectiveness of ACT on anxiety and depressive symptoms. Davoudi et al. (2017) studied male smokers and their depression and anxiety scores, as well as smoking cessation rates after the ACT intervention. Their results reported that those in the intervention group had lower levels of depression and anxiety and higher smoking cessation rates compared to the control group who received standard counselling services. Therefore, the authors highlighted the effectiveness of ACT in improving the symptoms of comorbid depression and anxiety. In another study involving university students, the authors reported the findings that the university students who participated in ACT workshops scored higher on psychological flexibility after the intervention and reported better well-being and lower anxiety and depression symptoms than the control group (Gregoire et al., 2017). Twohig and Levin (2017) also summarized 36 randomized controlled trials and concluded that ACT may be a more effective treatment for anxiety and depression than the usual treatments and the waitlist condition, the effect of which was achieved through greater psychological flexibility in the

participants. Salari et al. (2021) emphasized in their systematic review that ACT was effective in reducing the mean score of anxiety and depression post-treatment and at follow-up in patients with cancer, suggesting ACT as a conducive therapy approach to improving anxiety and depression simultaneously.

Recently, Bai et al. (2020) documented in their systematic review and meta-analysis that ACT improved symptoms of depression after the intervention and at three months post-treatment. They further found that ACT was more effective for those with mild depression, and ineffective for those with depression on moderate or severe levels. Their results attested that ACT was effective for adults with depression and ineffective for minors. Studies comparing the effectiveness of ACT with CBT on Major Depressive Disorder have yielded similar findings. A-Tjak et al. (2018) discovered that ACT condition showed 75% of symptom reduction while CBT condition showed 80% of symptom reduction; both intervention groups reported significant decreases in symptoms of depression and greater quality of life than before treatment and at months following the treatment. The results indicated no significant differences between the ACT and CBT groups. Indeed, a more recent clinical effectiveness trial reported that both ACT and CBT showed similar clinical effectiveness as they were associated with noticeable and stable decrease in symptoms of depression and mixed mental disorders (Samaan et al., 2021). They found that the majority of the patients showed significant recovery from depression, concluding that ACT is a feasible alternative option to CBT.

Evidence also suggests ACT as a viable intervention for the treatment of anxiety disorders. Bluett et al. (2014) reviewed findings on the effectiveness of ACT on anxiety and OCD spectrum disorders and reported evidence of support for a unified ACT protocol for anxiety disorders. The authors concluded that while there is more support for the effectiveness of ACT

with GAD, OCD, some OCD spectrum disorders, and social phobia, evidence is still lacking for the effectiveness with PTSD, simple phobia, and panic disorder. Similarly, Philip et al's (2021) systematic review examining the effectiveness of ACT in the treatment of OCD highlighted that ACT showed significant symptom reduction in OCD. In another study, Lopez (2000) conducted a case study on a male individual with panic disorder and agoraphobia and offered twelve sessions of ACT treatment. The researcher reported that the male individual achieved recovery after the treatment. The efficacy of ACT has also been found in SAD. Caletti et al. (2022) concluded in their review that ACT helped the participants with SAD to improve selective psychological difficulties, however, further generalization deserves further evidence. In the treatment of anxiety disorders, ACT has shown similar clinical outcomes to alternative treatments such as CBT, with no significant difference in the process of change (Bluett et al., 2014). In another randomized controlled trial comparing ACT and CBT in the treatment of social phobia, Craske et al. (2014) reported that in general, the two treatments showed similar clinical improvements while resulting in better outcomes than the control group in most aspects.

As part of the intervention, these studies disseminated ACT concepts by engaging participants in practicing the six core processes of ACT, including mindfulness and cognitive defusion exercises, values clarification, goal development, acceptance skills, and creating an action plan. Therefore, improvement in the six core processes have been shown to be associated with a decrease in depression and anxiety symptoms.

Mechanisms of Change for Depression and Anxiety

Research has investigated the mechanisms of change using ACT in the treatment of depression and anxiety. In a study examining the outcomes of ACT in Iranian veterans, Ghadam et al. (2020) reported high effectiveness of ACT as the veterans showed a reduction in anxiety

and depression symptoms. More specifically, they indicated that emotional regulation, behavioural activation, values identification, cognitive defusion, and acceptance contributed to the reduction of depression and anxiety. They described that the veterans were taught to accept their emotional and cognitive experiences instead of avoiding or struggling with them. In addition, the veterans applied cognitive defusion skills that helped them create distance from their thoughts and observe their thoughts as only thoughts. The behavioural component consisted of raising the veterans' awareness of how their thought patterns were defeating and supporting them to continue to focus on their values in life by engaging in value-aligned behaviours. Furthermore, their findings suggested that creative helplessness techniques showed effectiveness in reducing anxiety. In the study, they disseminated the concept of creative helplessness by supporting the veterans to realize that avoidant behaviours often strengthened the thoughts and feelings they wanted to avoid. By doing so, they aimed to decrease the veterans' use of avoidant behaviours and increase their use of acceptance and cognitive defusion skills, which were achieved as shown in their results. In another study, Ruiz et al. (2020) reported the effectiveness of ACT for comorbid GAD and depression. Their intervention targeted repetitive negative thinking by helping the participants to become more aware of their triggers for rumination, apply cognitive defusion strategies, and commit to value-aligned behaviours. In their sample of six adult participants, five participants showed significant improvement. Indeed, Bramwell and Richardson (2018) found that decreases in cognitive fusion, as well as increases in values-aligned behaviours, were significantly associated with better outcomes in depression and mental health. However, the authors stated that decreases in depression symptoms may contribute to the changes in cognitive fusion and values-aligned behaviours, cautioning against making conclusions about the direction of influence.

Other research has further highlighted the importance of acceptance and values in inducing change. For instance, Najvani et al. (2015) suggested ACT as an effective intervention for women with breast cancer who struggle with depression, as ACT helped increase acceptance of thoughts and feelings, clarify values, and enhance psychological flexibility. The authors stated that cancer patients may be detached from their values in the face of fatal health conditions; having clear values and goals may empower them to focus on matters that are within their control rather than matters outside their control. The authors emphasized that acceptance also allowed patients to cease struggling with thoughts and feelings and focus on areas of life that were important to them, which increased medical and psychological outcomes. Research examining anxiety has also reported similar findings. Findings from Khoramnia et al.'s (2020) randomized clinical trial indicated that ACT was successful in reducing social anxiety symptoms in students; the intervention consisted of twelve sessions with a primary focus on acceptance, values, and committed action. Therefore, the authors highlighted that acceptance and committed action were the main processes that explained the change. In summary, these findings seem to provide strong evidence for the importance of acceptance and value-guided actions in improving depression and anxiety.

Other core processes of ACT have also been investigated. In a study by Yu et al. (2017a), they examined whether change in self-as-context was associated with better outcomes in adult participants with chronic pain by providing ACT intervention and measuring pain-related interference and depression before and after treatment and at nine-month follow-up. Their results indicated that the ACT intervention was associated with increased self-as-context in their participants, which was associated with less pain-related interference, less depression, and better adjustment in occupational and social contexts. They found that self-as-context had a stronger

association with depression compared to other outcome measures, providing evidence for its impact on emotional regulation. In a separate study, Yu et al. (2017b) also discovered that self-as-context showed a significantly negative correlation with depression in adults with fibromyalgia, further suggesting self-as-context as an important construct. However, in the systematic review by Godbee and Kangas (2019), they reported mixed findings on self-as-context, concluding that the evidence for the use of self-as-context as an effective standalone ACT intervention was still lacking.

Among the six core processes is contact with the present moment. Practicing mindfulness exercises can help increase individuals' abilities to be in contact with the present moment (Twosyfyan & Sabet, 2017). In a randomized clinical trial involving patients with painful diabetic neuropathy, Davoudi et al. (2020) administered an ACT intervention that included teaching patients how to respond to pain and live in the present moment with mindfulness. Their findings revealed that ACT successfully reduced symptoms of depression and improved sleep by strengthening the patients' acceptance and mindfulness skills. They explained that as depression and sleep were tightly linked to each other, a change in either area would lead to improvement in the other. In another recent case study of a male in his mid-20s struggling with comorbid depression and anxiety, Brem et al. (2019) drew from the concepts of ACT to increase the participant's understanding of the workability of his avoidant and control-driven behaviours as well as his ability to live in the present moment by practicing meditation. The participant showed reduced symptoms of depression and anxiety, increased mindfulness, and increased self-compassion at the end of treatment.

In a recent systematic review of twelve contemporary mediation studies, Stockton et al. (2019) investigated the mechanisms of change while using ACT; they reported low internal

reliability in studies and the inconsistent effort in examining all six core processes of ACT. They noted that acceptance was the only process out of the six core processes that received the most attention and was found to significantly moderate and mediate the outcomes across studies. In addition, the authors suggested that acceptance may be the main mechanism of change when applying ACT, as the concept of acceptance in ACT may be most distinguishable from the concepts of other therapeutic approaches (e.g., CBT). The authors reported that while studies examining cognitive diffusion and committed action reported significant mediation results, the results failed to show that the effect was distinct to ACT. A lack of mediation studies examining the core processes of present moment, values, and self-as-context was further discussed. The authors called for more research to examine these three core processes with valid and reliable measures.

Davoudi et al. (2017) also noted the effect of acceptance on the outcomes of wellbeing. The authors explained that acceptance in ACT helps reduce anxiety and depression through altering individuals' responses to their cognitive and emotional experiences. They stressed that by increasing acceptance, ACT helps individuals to break the negative cycle of thought repression that often increases anxiety. Therefore, accepting aversive cognitive and emotional experiences helps stop fueling anxiety, and allows individuals to move towards their values. Similarly, Davoudi et al. stated that acceptance alleviates depression by reducing the repressive behaviour and rumination, as depressed individuals often ruminate in an attempt to find reasons for their depression. The authors highlighted that accepting their current states can help decrease rumination and psychological distress.

In summary, findings appear to show that increases in the six core processes of ACT are associated with decreases in depression and anxiety, with the strongest evidence for acceptance as the main process that explains the better outcomes, the effect of which is also distinct to ACT.

ACT Online Therapy

Researchers have called for a more accessible and easily disseminated method to deliver psychological interventions (Levin et al., 2016; Sun et al., 2022). Web-based interventions have received attention due to its practicality and cost-effectiveness, as offering this option may help to respond to the high demand for counselling services (Levin et al., 2016). Levin et al. (2016) conducted a study on university students to test an ACT web-based program that aimed to help students reduce their psychological distress. The participants completed six web-based sessions that covered the six core processes. Examples, metaphors, experiential exercises, and strategies were introduced in the sessions to help participants apply these skills. Participants were given homework after each session to practice the skills. Their findings indicated that students showed acceptance for the program, as shown through their completion of at least half of the program and relatively high satisfaction ratings. While the program did not lead to better outcomes on all psychological flexibility measures, the intervention group showed superior outcomes to the waitlist group in general distress, anxiety, and depression. Viskovich and Pakenham (2019) also conducted a randomized controlled trial to assess the effect of a web-based ACT program on primary outcomes including depression and anxiety as well as the six core processes in university students. The participants participated in the web-based intervention for four weeks with four modules targeting the six core processes of ACT. The intervention was supplemented with presentations, videos, audios, and written exercises. Their results revealed significant

improvements on all primary outcomes including depression and anxiety, and the six core processes, which were maintained at 12-week follow-up.

In a more recent systematic review and meta-analysis, Sun et al. (2022) concluded that individual, group, and online ACT interventions showed effectiveness in reducing the depressive symptoms, with no significant differences between these three delivery methods. Similarly, evidence suggests that ACT delivered online can be an effective treatment for adults with GAD and symptoms of GAD, as well as panic disorder (Ivanova et al., 2016; Kelson et al., 2019). Therefore, these findings provide evidence for ACT as an intervention that can be delivered online and still maintain its efficacy in the treatment of depression and anxiety.

ACT Group Therapy

In recent years, evidence has emerged for ACT group therapy as a valid therapeutic intervention in the treatment of depression and anxiety. Coto-Lesles et al. (2020) reported in their systematic review that ACT group therapy is effective in treating a range of emotional disorders, including anxiety and depression. They concluded that participants in the ACT intervention group showed better emotional outcomes and psychological flexibility than participants in control groups. Their results further provided evidence that ACT group therapy is at least as effective as CBT. Ferreira et al. (2022) also conducted a meta-analysis on the effects of ACT group therapy on anxiety and depression in adults. They revealed that while group ACT showed significant effectiveness in reducing anxiety and depression when compared to participants in control groups without treatment, anxiety reduction was no longer statistically significant in comparison to participants who received alternative treatments such as CBT. On the other hand, depression reduction remained statistically significant in comparison to participants who received alternative treatments. Based on these findings, the authors concluded that while group

ACT may be effective in the treatment of both depression and anxiety, it may be a superior therapeutic intervention to alternative interventions in the treatment of depression. The authors further reported that the number of sessions influenced the efficacy of group ACT. For instance, they discovered that workshops that spanned a day or two (around five hours), or group ACT that offered six to 12 sessions were effective. However, two to five sessions of group ACT were found to be only effective in reducing depressive symptoms.

The effectiveness of group ACT on relapse and residual symptoms at follow-up has also been documented. Elahe et al. (2018) examined the association between psychological flexibility and depression relapse at follow-up after an eight-week group ACT intervention. Their findings reported mental health improvements at 12-month follow-up, and that greater psychological flexibility was a significant mediator for the reduction of depressive symptoms. Similarly, Ostergaard et al. (2019) found that group ACT reduced residual symptoms in depression at 12-month follow-up, suggesting that group ACT may be effective in relapse prevention for depression. Furthermore, Eilenberg et al. (2015) conducted a randomized controlled trial to compare the health anxiety levels of individuals who received 3-hour weekly sessions for 9 weeks and individuals who were on the waitlist. The authors reported that group ACT successfully reduced health anxiety in the treatment group, the results of which were maintained at 10-month follow-up. Indeed, findings by Clarke et al. (2020) provided evidence that ACT improved music performance anxiety in student vocalists after a treatment of six weekly two-hour group sessions. The improvements were maintained at 3-month follow-up. In light of these findings, group ACT has shown to be effective in alleviating symptoms of depression and anxiety as well as helping individuals maintain their improvements.

Summary

In conclusion, chapter two presented findings on the transdiagnostic factors of depression and anxiety. Research considered rumination, expressive suppression, and avoidance as symptoms of emotion regulation deficits that underlie the onset and maintenance of depression and anxiety. ACT interventions were shown to be an effective transdiagnostic approach in treating depression and anxiety through reducing experiential avoidance and increasing psychological flexibility. This section highlighted ways that research in the past have incorporated the six core processes of ACT in their studies to reduce depression and anxiety in their participants. More specifically, research suggested acceptance as the main mechanism of change in ACT (Stockton et al., 2019). Finally, online and group delivery of ACT interventions were also shown to be effective in treating depression and anxiety. In fact, Sun et al. (2022) concluded that there were no significant differences between the effectiveness of individual, group, and online ACT interventions. Therefore, the findings suggest ACT as not only an effective transdiagnostic treatment, but a treatment that can also be flexibly delivered to treat depression and anxiety.

Chapter 3: Summary, Recommendations, and Conclusions

Summary

Problem and Purpose Statement Restated

Depressive disorders and anxiety disorders have surged in the number of cases over the years, with an 18.4% increase in depression and a 14.9% increase in anxiety from 2005 to 2015, totaling 322 million cases of depression and 264 million cases of anxiety (World Health Organization, 2017). The high prevalence has been associated with low social productivity, poorer health, and higher mortality rates (Chisholm et al., 2016; Walker et al., 2015). Numerous studies have found high comorbidity rates between depression and anxiety (Carter et al., 2001; Kessler et al., 2005; Kessler et al., 2007). Researchers have argued that there are transdiagnostic factors that give rise to the high comorbidity rates (Andrews et al., 2002; Goldberg et al., 1987). Therefore, the purpose of this review was to examine the prominent transdiagnostic factors between depression and anxiety and explore the effectiveness of ACT as an effective treatment by examining its application to the transdiagnostic factors.

Transdiagnostic Factors of Depression and Anxiety

Findings showed that deficits in emotion regulation contributed to depression and anxiety, as the individuals have difficulties identifying and naming their emotions, tolerating, and responding to their psychological distress with effective coping strategies (Cisler et al., 2010; Joorman & Stanton, 2016). Emerging from emotion regulation deficits are the three prominent maladaptive coping strategies shown by research: rumination, expressive suppression (ES), and avoidance. Rumination predicts low mood in depression and heightened physiological response in anxiety (Olatunji et al., 2013); it has been shown to predict and maintain depression and anxiety through prolonging the effect of stressors (Hosseinichimeh et al., 2018; Wong &

Moulds, 2009). Findings on ES showed that beliefs in the uncontrollability of emotions are associated with increased use of ES, which contributes to the increase in anxiety and depressive symptoms (Deplancke et al., 2022). ES has been shown to be an effective short-term strategy for reducing anxiety in non-depressed individuals, but not in depressed individuals (Boland et al., 2019). Research has also found the effectiveness of ES in reducing subjective distress in individuals with anxiety but highlighted its maladaptive functioning as it maintains avoidance (Ellard et al., 2017). Lastly, avoidance has been documented as a method that depressed and anxious individuals often engaged in to escape from the feelings of distress, which aggravated anxiety and depressive symptoms over time (Craske et al., 2017; Fester, 1973; Holahan et al., 2005; Rudaz et al. 2017)). Depressed individuals were found to have the tendency to avoid strong negative and positive emotions, which increased the difficulty of recovering from negative emotional states (Joormann & Vanderlind, 2014). In cases of anxiety, avoidance may give rise to worrying which was used to maintain a negative emotional state in order to prevent further increases in distress (Newman & Llera, 2011). In summary, rumination, expressive suppression, and avoidance emerged as the prominent transdiagnostic factors that contributed to the onset and maintenance of depression and anxiety.

ACT and Depression and Anxiety

ACT is a therapeutic intervention that focuses on reducing experiential avoidance (EA) and increasing psychological flexibility through targeting the six core processes to help individuals to live a value-guided life in the face of negative experiences. EA seems to explain that rumination, expressive suppression, and avoidance, the maladaptive coping strategies often observed in cases of depression and anxiety, occur due to an unwillingness to remain in contact with the negative experiences. Therefore, ACT appears to improve comorbid depression and

anxiety by applying acceptance, mindfulness, and behavioural strategies to address the transdiagnostic factors. As shown by numerous research, ACT showed promising results in ameliorating depression and anxiety, with similar clinical effectiveness as CBT. Among the six core processes, Stockton et al. (2019) concluded that acceptance may be the main mechanism of change when applying ACT, which may be due to relatively limited research on the other core processes. Davoudi et al. (2017) explained that acceptance helps reduce depression and anxiety by reducing rumination and thought repression, both of which fuel depression and anxiety, respectively. In conclusion, increases in the six core processes of ACT have been shown to improve depression and anxiety, with the strongest evidence for acceptance as the main mechanism of change. Similarly, online ACT interventions as well as ACT group therapy demonstrated efficacy in the treatment of depression and anxiety, suggesting that ACT can be flexibly delivered while maintaining its effectiveness.

Workshop Recommendations

This literature review suggests a full-day workshop that aims to disseminate concepts of ACT such as the six core processes to help participants conceptualize their situations. There will be an experiential component that engages the participants to practice various skills in ACT. The workshop will primarily draw from the psychoeducation and exercises from Harris (2019) and provide psychoeducation around the common factors that contribute to depression and anxiety, such as rumination, expressive suppression, and avoidance. Upon completion, the participants should be able to:

- Have a basic understanding of the framework of ACT
- Explore their goals and values and understand the differences between them

- Conceptualize their situations using the choice point, understand what their "towards" and "away" moves are, and identify moments of being "hooked"
- Identify 2 cognitive defusion skills and 2 acceptance skills that can be applied to their daily life
- Create an action plan

Each part of the workshop will include psychoeducation and many group discussions to facilitate the learning of the participants. The first half of the workshop will focus on the exploration of goals and values, which will be followed by an introduction to the choice point. The second half of the workshop will include the exploration of examples of experiential avoidance, cognitive defusion and acceptance exercises, and an action plan.

Workshop Outline

- What is ACT?
- What are goals and values?
- ACT conceptualization of problems
- What is getting in the way?
- How do we "unhook"?
- Action Plan

What is ACT?

ACT, short for acceptance commitment therapy, is pronounced as the word "act." The word act is a very fitting word for this modality because of the emphasis on how we can choose to respond to our emotions and thoughts and if we are able to still behave in a way that meets our needs in the long run. ACT is based on the idea that human suffering is an inevitable part of our lives. Therefore, attempts to eliminate suffering are often futile; they may provide temporary

relief but often create severe problems over time. In other words, ACT sees experiential avoidance, or an unwillingness to stay in contact with our suffering, as the main problem of various psychological distress. Instead of trying to eliminate painful experiences, ACT aims to increase psychological flexibility using the six core processes to change our relationships with our thoughts and feelings, often through accepting or creating a distance from them, so we can act according to our values that lead to meaningful lives.

What are Goals and Values?

What does it mean to lead a meaningful life? In ACT, it means following our values. However, goals are often mistaken for values. As many of us are familiar with goal setting, we will focus on goal setting first. On the piece of paper in front of you, please write down the two most important goals that you have at this moment. We will look at the goals and break them down according to the SMART goals template as shown in Figure 1 (Doran, 1981).

Did you make any changes to the original goals you set? How do you feel about the goals now after the change? Please get into groups of three and share for 10 minutes.

How are goals different from values? Harris (2019) stated that goals are the desires individuals aim to achieve in the future, while values are here and now and how individuals "behave…on an ongoing basis…every step of the way toward achieving your goals — whether you achieve them or not" (p.657). For example, Hayes et al. (1999) used the example of "getting married" versus "being loving." Getting married is a goal that can be achieved; on the contrary, having the value of being loving represents the way an individual wants to behave on an ongoing basis. Values represent the kind of person we want to be regardless of whether we have achieved our goals or not; Harris (2019) described values as an inner compass that points us in the direction we want to move towards.

I would like to invite you to think about this question: "Imagine that one year from now, you are looking back at the difficulty you are facing today. Imagine that you have handled it in the best possible way, behaving like the person you really want to be, deep in your heart. What qualities or strengths (e.g., courage, kindness, compassion, persistence, honesty, caring, supportiveness, honesty, integrity, love, commitment) did you live by or act upon in the face of this?" (Harris, 2019, p.669). Here's a list of values for your reference. Please take 5 minutes to write down the values that resonate with you, and take 15 minutes to discuss the following in groups of two:

- How are your values different from your goals?
- How do you demonstrate your values in your daily life?
- What would following your values look like when you're working towards your goals?

We will return to our large group discussion afterwards.

ACT Conceptualization of Problems

For the next section, we will be conceptualizing problems through the lens of ACT by using a tool known as "The Choice Point." From the ACT perspective, there are two things that we do: "towards" moves and "away" moves. "Towards" moves mean that we are doing the things that are helpful and behaving effectively like the sort of person we want to be. "Away" moves occur when we are doing the things that are unhelpful and behaving ineffectively unlike who we want to be. From our previous exercise of exploring goals and values, we know what our "towards" moves are. Difficult thoughts, feelings, and situations are labelled in the bottom center of the choice point, with an arrow pointing in the top right direction representing "towards" moves and an arrow pointing in the top left direction representing "away" moves. On the choice point in front of you, please take a moment to write down your goals and values at the end of the

right arrow, because these are the behaviours we engage in when we are acting effectively and making “towards” moves.

The Choice Point

However, “towards” moves are not all we do, so I invite us to take a look at what happens when we are not making “towards” moves. Throughout life, we encounter all kinds of situations that give rise to various thoughts and feelings. When they show up, they can “hook” us in and impact our mind and behaviours. When we get hooked, we start engaging in “away” moves, getting lost in our thoughts or acting in ways that are ineffective. In other words, the more we are hooked, the more “away” moves we do. However, there are times when we can unhook ourselves from these thoughts and feelings, and do “towards” moves instead. When we face difficult situations, we can decide how we are going to respond to them. We can allow ourselves to get hooked and do “away” moves, or unhook ourselves so we can do “towards” moves.

Please take a look at the choice point in front of you and think about the goals and values that you have written down. What difficult situations, thoughts, and feelings have you experienced? Please take 5 minutes to write them down at the bottom of the choice point labelled “Situation(s) Thoughts & Feelings” and take 10 minutes to share in groups of two.

What is Getting in the Way?

In order to understand why we get hooked, it is important that we understand “experiential avoidance,” a term used in ACT to refer to the behaviour of avoiding, controlling, or suppressing negative private experiences due to an unwillingness to stay in contact with the difficult thoughts, emotions, bodily sensations, and behaviours. While experiential avoidance may provide temporary relief, it often intensifies the distress in the long run. Therefore, experiential avoidance is seen as the main contributor to psychological problems in ACT.

Indeed, behaviours such as rumination, expressive suppression, and avoidance are products of experiential avoidance that have been shown to underlie both depression and anxiety. Rumination denotes thinking repetitively about negative emotional states with repetitive negative thoughts and ideas. From the ACT perspective, rumination occurs when we become hooked by our thoughts. Research has further shown that individuals escape from the discomfort of taking actions and thinking more concretely about their situations through rumination (Gemille et al., 2006). Expressive suppression is defined by the conscious or subconscious attempt to alter emotional experiences by suppressing their overt expression of emotions (Gross, 1998), which indicates the unwillingness to stay in contact with our emotional experiences. Lastly, avoidance is used to alleviate distress in depression and anxiety. However, avoidance prevents effective actions and positive reinforcement in depression, and creates a debilitating effect in anxiety through minimizing daily functioning.

Please reflect on how you have responded to those difficult situations, thoughts, and feelings:

- Did you attempt to avoid, control, or suppress them?
- What behaviours did you engage in?
- What were the short term and long term effects?
- Would you consider that a toward move or an “away” move?

Please take 5 minutes to write down the behaviours that you engaged in as a result of getting hooked next to the word “away” on the choice point. Your choice point should be complete at this point. Please take 15 minutes to share in groups of 2 before we return to our large group discussion.

How do we Unhook?

Harris (2019) shared that when difficult thoughts or feelings show up, sometimes they can feel like an emotional storm where we may find ourselves being swept away and swallowed by the storm. When a storm is blowing up, there is often nothing we can do to stop it right away. Imagine that our boat is approaching the harbour just as a storm is blowing up, what is our first priority? We drop the anchor so even when the storm is blowing, the boat can ride out the storm. Similar to how we can face our emotional storms, we can drop the anchor when the storm is blowing and keep us steady until the storm passes.

There are six core processes of ACT that increase psychological flexibility, including our ability to respond to our thoughts and feelings more effectively. They are acceptance, defusion, present moment, self-as-context, values, and committed action. Acceptance refers to being open to our positive and negative experiences in a non-judgmental way. Defusion is the action of using mindfulness to create distance from one's experiences, which allows for better flexibility and choice. Present moment is defined by bringing awareness to the here-and-now experiences. Self-as-context is the notion that we are different from our thoughts, feelings, and sensations; only our observing self is a constant being. Values denote ways of doing things that give our lives meaning. Lastly, committed action refers to acting on our values even in the face of difficulty. Improvements in these six independent but interrelated processes represent increased psychological flexibility.

We will focus on defusion and acceptance for the next part of this workshop and experiment with different exercises to practice defusion and acceptance.

Defusion

Defusion denotes responding to our thoughts and feelings in a way that prevents them from controlling our behaviours. The process involves being mindful and creating distance from the content. Defusion follows the "three D's": Notice, Name, Neutralize (Harris, 2019). We need to first notice the content of our mind and name it, such as by labelling the emotion as "anxiety" or the thought as "self-criticism." Next, we neutralize the thought by asking ourselves: "does letting this thought or feeling determine your choices help you act effectively?". Defusion requires us to stop evaluating, avoiding, obeying, dwelling, or giving attention to the content of our thoughts and feelings. By doing so, we are better able to unhook from them and respond in a flexible way.

Exercise 1: "I'm having the thought/ feeling that…"

Please examine the thoughts and feelings that hook you in on your choice point, pick one, and think about it and believe it for ten seconds. Notice how you feel as you do so. Now please add "I am having the thought that" or "I'm having the feeling of" to the beginning of that thought or feeling. Observe how you feel as you word it this way. Then, please add "I notice that I am having the thought that." What do you notice? How do you feel?

Defusion Exercise 2: Sing "Happy Birthday"

Please pick another thought and take ten seconds to think about it. I invite you to sing the thought to the melody of "Happy Birthday." Now, think about a cartoon character, news reporter, or movie character and imagine them saying the thought. What do you notice? How do you feel?

Defusion Exercise 3: Describe the Thought

Please pick another thought and believe it for ten seconds. Now, describe what the thought would look like if it had a shape; what colour, size, texture, temperature, and motion would it be? What do you notice as you think about it as an object? How do you feel?

We will take 10 minutes to discuss as a whole group what it was like to do these defusion exercises.

Acceptance

Among the six core processes, research has found that acceptance is the main mechanism of change in ACT that consistently influences the outcomes across studies (Stockton et al., 2019). Acceptance has been shown to contribute to improvements in depression and anxiety. Acceptance denotes "opening up to our inner experiences (thoughts, images, memories, feelings, emotions, urges, impulses, sensations) and allowing them to be as they are, regardless of whether they are pleasant or painful" (Harris, 2019, p.760). Acceptance involves the "three A's:" Acknowledge, Allow, Accommodate. To acknowledge our inner experiences is to notice them without judgment. Allowing the undesirable experience means letting it stay without trying to control or avoid it. Here, self-talk can be helpful (eg. "I don't like this feeling, but I'm going to let it be"). To accommodate, we make room for the unwanted experience and adapt to coexisting with it. Through acceptance, we allow the inner experiences to come, stay, and go on their own. However, acceptance is not about accepting the situation; it serves to help us unhook from thoughts and feelings and choose to behave according to our values.

Acceptance Exercise 1: Mindful Naming

For this exercise, we will be working with the thoughts and feelings that we have written down on our choice point. To the best of your ability, please take ten seconds to recall the feeling that hooks you in and makes you do "away" moves. Now, I invite you to give your feeling a

label, such as by saying “I’m noticing sadness,” “Here’s anxiety,” or “I’m having a feeling of anger.”

Acceptance Exercise 2: Breathe and Expand

As you are noticing this feeling, please try breathing into it. Breathe into this feeling and around it. Imagine space opening up around this feeling and see if you can allow this feeling to be there. You may have the urge to push it away because it is difficult to stay with it. You can simply acknowledge the urge and breathe into it. Continue observing the sensation without trying to push it away.

Acceptance Exercise 3: Healing Hand

Please take one of your hands and place it where you feel this sensation in your body. Imagine that your hand is a healing hand and feel the warmth flowing from your hand. The warmth seems to help you make room for this sensation. Please pause for ten seconds.

Acceptance Exercise 4: Re-engage with the world

Now please notice your surroundings using your five senses. What do you see, hear, smell, taste, and touch? We will take a moment to thoroughly notice them. This is how we can re-engage with the world and decide what we can do to act effectively.

We will take 10 minutes to discuss as a whole group what it was like to do these acceptance exercises.

Action Plan

Our choice point tells us what difficult thoughts and feelings tend to occur for us, and what kinds of behaviours we engage in when we get hooked by them. We have also practiced defusion and acceptance that can help us unhook to act according to our values and goals. For the

next section of our workshop, we are going to look at how committed action is implemented in ACT.

Committed Action

Committed action occurs when we take effective action driven by values (Harris, 2019). It can be demonstrated through physical and psychological action, such as exercising and being more compassionate towards ourselves, respectively. Committed action includes flexibility in adapting to and responding to difficult situations in an effective way to follow our values. It may require us to persist with or change our behaviours. We have set SMART goals earlier in our workshop, so let us explore the common barriers to changing our behaviours in pursuit of our goals.

Harris (2019) introduced the acronym HARD to explain the four most common obstacles to change; H stands for hooked, A stands for avoiding discomfort, R stands for remoteness from values, and D stands for doubtful goals. Please reflect on the following questions, write down your answers, and share your reflection in groups of two:

- What does your mind tell you that stops you from acting effectively?
- What difficult experiences (thoughts, feelings, sensations, memories…etc) are you uncomfortable having?
- When you are doing "away" moves, what values are you neglecting?
- Please rate how realistic your goals seem to you on a scale of zero to ten, with zero being completely unrealistic and ten being very realistic. If you rate your goals below a seven, it may mean you need to adjust the goals to make them more realistic, so you are more likely to act on them.

Group Reflection

I invite us to share our thoughts on our experience today. Here is a list of reflection questions for us to think about:

- What was most helpful about today?
- How will you integrate ACT into your daily life?
- Which areas will you need more support in?
- What's the smallest, simplest, easiest step you can take by the end of today that will move you towards your goals?

Summary

This section drew from the discussion in the literature review on ACT as an effective treatment for treating comorbid depression and anxiety by targeting the transdiagnostic factors. As evidenced by findings, rumination, expressive suppression, and avoidance are the transdiagnostic factors that underlie depression and anxiety. Research has indicated that these factors imply psychological inflexibility. Therefore, as a treatment that aims to increase psychological flexibility, the findings suggest that targeting the transdiagnostic factors may contribute to the effectiveness of ACT in the treatment of comorbid depression and anxiety. Furthermore, out of the six core processes, acceptance has been shown to be the main mechanism of change that explains positive outcomes, the effect of which is distinct to ACT. I recommended a workshop based on the literature review and guide by Harris (2019) to educate participants on how to conceptualize their situations using ACT and highlight behaviours (rumination, expressive suppression, avoidance) that may give rise to depression and anxiety. The workshop included components of self-reflection, group discussion, and experiential exercises on cognitive defusion and acceptance. The workshop aimed to help individuals develop

new perspectives and relationships with thoughts and feelings, understand the obstacles to their goals, and apply strategies to remain committed to their goals and values even in the face of suffering.

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Figure 1

Specific	What are you trying to do? Why are you trying to do this?	
Measurable	How will you measure what you're doing? How will you assess our achievement?	

Achievable	Do you have what you need to achieve the goal? If not, what do you need?	
Realistic	Can you meet the goals you're setting forth? Do you need to change the objective?	
Time-bound	What is the timeline to meet your goals?	

Note. This table presents a SMART goals template based on the work of Doran (1981).