Assessing the Impact of DBT Informed Therapy with Mindful Self-Compassion for Adolescents with Emotional Dysregulation

by

Samantha Pike

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St. Lawrence College
Kingston, Ontario
Canada
Dedication

This thesis is dedicated to my husband. For your continued support, I am forever grateful.
Abstract

Emotional dysregulation is associated with borderline personality disorder (BPD), but there remains an ethical debate regarding the appropriateness of diagnosing adolescents with BPD due to stigma and developmental stage (Laurensen, Hutsebaut, Feenstra, Busschbach, & Luyten, 2013). Regardless of the controversy, treatment is recommended for adolescents with severe emotional dysregulation as they may experience life threatening symptoms (Miller, Muehlenkamp, & Jacobson, 2008). Dialectical behaviour therapy (DBT) has been modified for adolescents and spans across 24 weeks (Rathus & Miller, 2015). The out-patient hospital adapted DBT for adolescents to DBT informed therapy, which spans across six weeks. Recently however, studies have indicated that mindful self-compassion (MSC) may also be effective for reducing emotional dysregulation symptoms (Diedrich, Hofmann, Cuijpers, & Berking, 2016). The purpose of this study was to compare two group therapies: DBT informed therapy and DBT informed therapy with MSC. It was hypothesized that the inclusion of MSC would result in greater decreases in anxiety and depression compared to DBT informed therapy only. A second hypothesis was that MSC would increase self-compassion among participants. Male and female participants between the ages of 13 and 17 with emotional dysregulation were sequentially selected from Child and Adolescent Psychiatry Division’s referral process. Thirty participants, 15 in each treatment group, completed pre- and post-questionnaires including the Beck Anxiety Inventory–Youth (BAI-Y) and the Beck Depression Inventory–Youth (BDI-Y; Beck, Beck, Jolly, & Steer, 2005). The participants in the DBT informed therapy with MSC also completed the Self-Compassion Scale (Neff, 2003). Statistical analysis revealed the inclusion of MSC with DBT informed therapy did not decrease scores of anxiety and depression more than DBT informed therapy alone. The inclusion of MSC did not result in increases in self-compassion scores among participants who completed DBT informed therapy with MSC. Limitations of the study included small sample sizes and reduced treatment length, which may have impacted the results. Recommendations for future research include randomized controlled trials and larger sample sizes.
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Chapter I: Introduction

Emotional Dysregulation Symptoms In Youth

Mood disorders are one of the most common mental health disorders seen in adolescents (Sayal, Yates, Spears, & Stallard, 2014). Emotional dysregulation is often associated with mood disorders (Greydanus, 2011) and other challenges such as borderline personality disorder (BPD) (Linehan & Wilks, 2015), which may contribute to poor coping strategies, such as self-harm behaviour and suicide (Linehan & Wilks, 2015). Although mood disorder diagnoses are common within the adolescent population (Sayal et al., 2014), there remains an ethical debate regarding the appropriateness of diagnosing adolescents with BPD because its symptoms may resemble typical, yet challenging, adolescent development leading to over or misdiagnosis (Laurenssen, Hutsebaut, Feenstra, Busschbach, & Luyten, 2013). Clinicians report reluctance to communicate adolescent BPD diagnoses due to stigmatization and the transient nature of symptoms during adolescence (Laurenssen et al., 2013). Despite these concerns, several studies have demonstrated the reliability and construct validity of adolescent BPD diagnoses (Miller, Muehlenkamp, & Jacobson, 2008). Additionally, arguments in favour of adolescent BPD diagnoses are that they may lead to prevention or effective treatment (Kaess, Brunner, & Chanen, 2014). Regardless of diagnosis, adolescents who experience BPD symptoms often require intervention, since symptoms left untreated may lead to further harm or death (Miller et al., 2008).

DBT Informed Therapy with MSC Intervention

Marsha Linehan, a leading expert in treating BPD, has suggested that traditional behavioural therapies rely heavily on change rather than acceptance (Linehan & Wilks, 2015). She argues that this framework leaves clients feeling invalidated and results in high rates of treatment withdrawal (Linehan & Wilks, 2015). In response, Linehan developed dialectical behavioural therapy (DBT), which focuses on promoting acceptance and change (Linehan & Wilks, 2015). Acceptance is achieved through validation and mindfulness techniques, while change is achieved by offering problem solving strategies and behavioural modification (Linehan & Wilks, 2015). Following growing evidence that DBT successfully decreased BPD symptoms in adults, the delivery was modified for adolescents with BPD symptoms (Miller, 2015). Unfortunately, research to date has not provided strong evidence of a positive impact for DBT with adolescents with BPD symptoms (MacPherson, Cheavens, & Fristad, 2013). O’Connell and Dowling (2014) argue that because DBT is the most popular treatment modality for BPD symptoms, it is difficult determine if other therapies might be more effective since they have not been as heavily researched. It has been suggested that mindful self-compassion (MSC) may enhance DBT for adolescents by incorporating self-kindness instead of self-criticism, mindfulness instead of overthinking, and common-humanity instead of feeling isolated (Germer & Neff, 2013). During MSC, sessions are devoted to defining self-compassion, mindfulness and common-humanity and how to integrate these concepts into daily life using guided meditation (Germer & Neff, 2013). In a review of several outcome studies, Leaviss and Uttley (2015) indicated that the introduction of MSC alone was associated with decreases in self-criticism and improved psychological well-being for several adult psychopathologies (Leaviss & Uttley,
Introducing MSC may provide adolescents, who have mood related diagnoses, with additional coping strategies to help manage difficult emotions.

**DBT informed therapy.**

Traditional DBT for adolescents spans over 24 weeks and includes mindfulness, emotional regulation strategies, dialectical approach to problem solving, distress tolerance strategies, and interpersonal relationship strategies (Paul, 2015). Therapists have delivered manualized group DBT informed therapy and DBT informed therapy with MSC for adolescents in order to provide therapy within a timely manner and to include additional evidence-based therapies, such as cognitive behavioural therapy strategies. Both DBT informed therapies included mindfulness, emotional regulation strategies, distress tolerance strategies, psychoeducation, and cognitive behavioural strategies. Several handouts from the *DBT Skills Manual for Adolescents* (Rathus & Miller, 2015) were adapted for both treatments.

**Rationale**

The purpose of this thesis was to compare the impact of two interventions for adolescents who have difficulty managing emotions, DBT informed therapy and DBT informed therapy with MSC, to assess whether both interventions result in decreases in symptoms, and whether DBT combined with MSC results in greater symptom decreases and additional positive impacts such as improved self-compassion.

The study was completed in an out-patient hospital setting in the Child and Adolescent Psychiatry Division. With assistance from the leading therapist, a manual was designed to offer DBT informed therapy with MSC, titled Building Resilience. The manual was co-created by the student researcher and is available at the agency upon request. Experienced therapists delivered DBT informed therapy with MSC for three separate groups of adolescents at separate occasions after several groups of DBT informed therapy was implemented.

All adolescents who participated in the DBT or DBT plus MSC interventions completed measures of depression and anxiety symptoms. The participants in the DBT plus MSC groups also completed a measure of self-compassion. Participants in the DBT informed therapy only group did not complete the self-compassion measure because these therapy groups were completed before this study was designed.

Analyzing and interpreting the data collected from these assessments may provide evidence and perhaps offer the clinical psychology community with an alternative treatment that enhances the coping strategies within established therapies for adolescents with emotional dysregulation. Therefore, the thesis seeks to provide evidence that DBT informed therapy with MSC may be an effective method to reduce and replace harmful coping strategies for adolescents.

**Hypothesis**

It is hypothesized that incorporating MSC into group DBT informed therapy programs should result in greater decreases in symptoms of anxiety and depression for adolescents.
compared to group DBT informed therapy and will also improve self-compassion scores for participants who complete the DBT informed therapy with MSC intervention.

**Thesis Overview**

This thesis reviews the literature regarding BPD symptoms and interventions, including behavioural and mindfulness therapies used to provide coping strategies and decrease symptoms in both adults and adolescents. The research is summarized, compared, and contrasted, while gaps in the literature are discussed. The methodology for facilitating group therapy and for collecting data is explained following the literature review. The result section presents and summarizes the data collected for both the DBT informed therapy and DBT informed therapy with MSC group interventions. Finally, a discussion of the results including limitations, their relevance to the existing literature, and recommendations for future research is addressed.
Chapter II: Literature Review

Diagnosing BPD During Adolescence

The controversy surrounding adolescent BPD diagnoses remains (Winsper et al., 2016). Clinicians have reported feeling reluctant to make adolescent diagnoses based on the potentially transient nature of symptoms and stigma (Laurensen et al., 2013). Yet, the prevalence of adolescent BPD has been shown to be between 1% and 5% of the adolescent population (Sharp & Fonagy, 2015). According to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association [APA], 2013), the criteria for BPD include: “a pervasive pattern of instability of interpersonal relationships, self image and affect, and marked by impulsivity beginning by early adulthood and present in a variety of contexts” (p. 663). Symptoms of BPD include poor anger management, impulsivity, anxiousness, depression, suicidality, self-harm, emotional dysregulation, avoidance of real or imagined abandonment, impairment in interpersonal and intrapersonal relationships, and stress-related dissociative states (APA, 2013). In order to make a BPD diagnosis, at least five of these symptoms must be persistent across all settings and times, and individuals must be above 19 years of age (APA, 2013). Due to age criteria, adolescent BPD diagnoses are reserved for unique circumstances (APA, 2013). Although adolescent BDP diagnoses are sparse, several researchers have estimated the prevalence, reliability, and validity of adolescent BPD (Miller et al., 2008; Sharp & Fonagy, 2015). For example, Winsper et al., validated the construct of adolescent BPD after adolescents displayed several psychopathologies similar to adults with BPD diagnoses. In fact, Sharp and Fonagy stated that not only were BPD symptoms present during adolescence, but that these symptoms peaked during this stage of development and slowly declined with age. In a longitudinal study of twins over 10 years, Bornovalova, Hicks, Iacono, and McGue (2009) found that BPD may be hereditary and that the onset of BPD often began during adolescence, consistent with the early onset criteria outlined by the DSM-5 (APA, 2013). Several studies have supported the applicability of adolescent BPD diagnoses and provided strong evidence that early interventions and prevention lead to better BPD prognosis (Chanen, Jovev, McCutcheon, Jackson, & McGorry 2008). Overall, lack of detection of BPD has led to inappropriate treatments, assessments, and resulted in lack of research for this adolescent population (Miller et al., 2008). Given the limited evidence base for BPD among adolescents, the present literature review incorporates adult population studies.

It is understandable how BPD may be misdiagnosed during adolescence, since BPD symptoms may be mistaken for mood disorders and other comorbid disorders (Zimmerman & Morgan, 2013). For example, BDP may be a transitional disorder from bipolar disorder, as youth who experience increased severity of suicide and self-harm behaviours eventually meet the diagnosis for BPD (Yen et al., 2015). Based on an extensive review, Winsper et al. (2016) found that adolescent BPD symptoms were comorbid with other disorders, such as depressive disorders, anxiety disorders, substance abuse disorders, eating disorders, post-traumatic stress disorder, suicide, and self-harm. Although BPD may be challenging to detect, two core features have been associated with a BPD diagnosis in research; emotional dysregulation (Salsman & Linehan, 2012) and self-harm or suicidality (Nakar et al., 2016).
Symptoms of BPD

**Emotional dysregulation.**

Emotional dysregulation is a core feature of BPD (Salsman & Linehan, 2012) and is strongly associated with adolescent anxiety and depressive symptoms (Shapero, Abramson, & Alloy, 2016). Emotional dysregulation is defined as having “heightened emotional sensitivity, inability to regulate intense emotional responses, and slow return to baseline” (Linehan, 1993, p. 43). More importantly, emotional dysregulation refers to the inappropriate behaviours and strategies that are used to manage emotions (Stepp et al., 2013).

Emotional dysregulation has been associated with other adolescent affect disorders, specifically depression and anxiety disorders (McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011). Experiences with high levels of emotional dysregulation may maintain the severity of BPD symptoms over time (Stepp et al., 2013) and lead to other psychopathologies (McLaughlin et al., 2011). Stepp et al. examined the role of emotional dysregulation for 150 adults with BPD over a year. Those who reported decreases in emotional dysregulation consequently reported decreases in two BPD symptoms: affect instability and identity problems (Stepp et al., 2013). The researchers examined changes in negative relationships and self-harm and reported that impulsivity may be responsible for these symptomologies rather than emotional dysregulation. Despite this finding, the researchers maintained that emotional dysregulation may still contribute to negative relationships and self-harm behaviours. Stepp et al. concluded that targeting emotional dysregulation may decrease BPD symptoms and interrupt BPD development. Since data were collected from adults with BPD, results of this study should be generalized to the adolescent BPD population with caution. However, targeting emotional dysregulation during intervention may decrease adolescent BPD symptoms, including anxiety and depression.

**Self-harm and suicide.**

Non-suicidal self-injury, often referred to as self-harm, is defined as the deliberate destruction of one’s body tissues including, but not limited to, cutting, burning, scratching, punching, and hitting (Kerr, Muehlenkamp, & Turner, 2010). Self-harm behaviours are associated with emotional dysregulation and impulsivity, both are symptoms of BPD (Nakar et al., 2016). Sadeh et al. (2014) found that non-suicidal self-harm behaviour was likely maintained by emotional dysregulation and self-punishment. This finding was consistent with other research suggesting that self-harm and suicidality behaviours were used to manage difficult emotions (Linehan & Wilks, 2015).

Adolescence is an interesting developmental period, as non-suicidal self-harm behaviours peak during this time and BPD features emerge (Sadeh et al., 2014). Adolescents who engage in frequent or high risk self-harm behaviour, including self-injury, substance misuse, and suicidal behaviour, often meet the criteria for BPD (Nakar et al., 2016). Stringer et al. (2013) reported that symptoms of BPD, anger and interpersonal conflicts, were associated with increased suicidal attempts. Self-injurious and suicidal behaviours may decrease with maturity because adolescents may resort to more socially acceptable behaviours in managing emotions, such as substance use (Stringer et al., 2013). Nakar et al. stated that adolescent self-injurious behaviour and suicidal behaviour may be early indicators of the development of BPD, which may assist clinicians in providing early interventions.
Depression.

Depression is one of the criteria for BPD (APA, 2013), and there is consensus regarding strong comorbidity between depression and BPD (Luca et al., 2012). Major depression disorder and BPD share similar temperament features (Luca et al., 2012). Additionally, studies have demonstrated a reduction in BPD symptoms when depression symptoms are targeted in treatment (Luca et al., 2012). Depressive disorder has been associated with several of the BPD core features: emotional dysregulation, suicidal ideation, and/or self-harm (Luca et al., 2012). Researchers recommend that treatment for BPD should target depressive symptoms when comorbidity is present (Luca et al., 2012).

Anxiety.

Given that anxiety is an indicator of a BPD diagnosis (APA, 2013), recognizing levels of anxiety may assist therapists in developing clinically significant interventions. According to Stringer et al., (2013) BPD traits are strongly correlated with anxiety and depressive symptoms. Comorbid anxiety disorders and BPD traits are correlated with increased suicide attempts. Since anxiety disorders are strongly associated with increased suicide risk, Stringer et al. recommend thorough assessments and improved access to effective treatments for BPD traits and other related psychopathologies.

Development of BPD

Biosocial theory.

Linehan (1993) proposed the biosocial theory to explain the development of BPD and emotional dysregulation in adults. The biosocial theory states that the interaction between biological predispositions and invalidating social environments results in emotional dysregulation (Linehan, 1993). According to Linehan, individuals engage in suicidal and self-harm behaviours in an effort to manage difficult emotions, as adaptive coping strategies are underdeveloped (Linehan, 1993).

Possible biological explanations for emotional dysregulation are impairments within the limbic system, specifically the anterior cingulate cortex, the orbitofrontal and dorsolateral prefrontal cortex, the hippocampus, and the amygdala (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). Impaired functioning in these areas of the brain may influence impulsivity and aggression symptoms related to a BPD diagnosis (Lieb et al., 2004). Imbalances in neurotransmitters, serotonin, dopamine, and MAO systems, also contribute to impulsivity and aggression related to BPD (Crowell, Beauchaine, & Linehan, 2009). Crowell et al. (2009) argue that impairments in cholinergic and noradrenergic systems may better explain emotional instability (Crowell et al., 2009). Although there may be evidence for biological explanations for emotional dysregulation in BPDs, these studies involved adult participants, and therefore may not explain emotional dysregulation in adolescents with BPD symptoms. One study, by Takahashi et al. (2009), compared 20 adolescents with BPD symptoms to a control group of healthy adolescents. Neuroimaging revealed that adolescents who reported impulsivity and aggressive behaviour had smaller insular cortices, an area within the limbic system, compared to participants without these behaviours (Takahashi et al., 2008). This was a key finding because
the limbic system is largely responsible for emotional regulation systems (Takahashi et al., 2008). The researchers reported that insular cortex volume was not associated with parasuicidal behaviours and reported that differences in insular cortex volume during adolescence may not be associated with adolescent BPD. Takahashi et al. may not have found an association with emotional dysregulation systems and suicidal behaviour in adolescence, but their small sample size may have limited the ability to do so. Nonetheless, the overall pattern of research findings suggests that biological vulnerabilities may contribute to emotional dysregulation.

Linehan (1993) added that the combination of invalidating social environments, mediated by parents, further exacerbates biological vulnerabilities, and which together lead to the development of emotional dysregulation and poor coping strategies. Social and cultural interactions contribute significantly to the development of BPD (Sharp & Fonagy, 2015). Specifically, caregiver relationships assist in the mediation of emotional regulation (Crowell et al., 2009). Crowell et al. elaborated on the biosocial theory and found that caregivers who were unable to model appropriate emotional responses, punished or ignored displays of emotions, and/or provided negative reinforcement for emotional arousal contributed greatly to the development of BPD. A meta-analysis by Winsper et al. (2016) found that children who were neglected or received verbal abuse were 3 times more likely to develop BPD in adolescence. This finding is consistent with the biosocial theory. However, other social interactions that may contribute to the development of the BPD are not clearly explained under the biosocial theory. For example, Winsper et al. found that children and adolescents who were physically or sexually abused were 3 to 5 times more likely to meet criteria for BPD in adolescence, respectively. This was an important finding, as studies have indicated that physical and sexual assault increase the risk of developing BPD more than punishment and interactions with caregivers (Winsper et al., 2016). Although there is evidence for the development of BPD after physical and sexual abuse (Winsper et al., 2016), biosocial theory does not address how these assaults contribute to BPD development.

**Cognitive development during adolescence.**

The biosocial theory also does not explain Sharp and Fonagy’s (2015) finding that adolescents experience increased BPD symptom severity compared to adults diagnosed with BPD. However, cognitive development processes may explain differences in BPD symptom severity in adolescents compared to adults. Emotional dysregulation may be explained through the cognitive development processes involved during adolescence (Neece, Berk, & Combs-Ronto, 2013). Neece et al. stated that normal adolescent development involves relying less on parents for emotional regulation and instead transitioning to cognitive strategies to regulate emotions. According to Steinberg (2005), cognitive development during adolescence is a critical developmental period for behavioural and emotional regulation. Steinberg reported that the areas of the brain that involve emotional and behavioural regulation have increased rates of development. These areas of the brain also mediate reward and motivation systems, consequently increasing arousal and risk taking (Steinberg, 2005). Increases in arousability and risk taking appear before emotional regulation systems have been fully developed (Steinberg, 2005). Having increased emotional arousability before regulation strategies are fully developed would make it understandably challenging for adolescents to control their emotions (Steinberg, 2005). Therefore, normal adolescent development appears to increase the risk of developing
emotional dysregulation (Neece, et al., 2013). The combination of biological vulnerabilities, invalidating social environments, and normal adolescent cognitive development may explain the increased risk of developing emotional dysregulation (Neece et al., 2013) and why symptoms of BPD seem to increase during adolescent development.

Treatment for adolescent BPD

Dialectical behavioural therapy.

Linehan developed dialectical behavioral therapy (DBT) in order to target the components of the biosocial theory of BPD for intervention and to ultimately decrease self-harm and suicidal behaviour due to emotional dysregulation by increasing adaptive coping strategies (Neece et al., 2013). Initially, DBT was heavily rooted in behavioural strategies in order promote adaptive coping strategies for women with suicidal behaviour (Linehan & Wilks, 2015). With a strong focus on change, therapists reported increased outbursts within sessions and greater treatment withdrawal (Linehan & Wilks, 2015). This problem was addressed by including acceptance strategies while still advocating change (Linehan & Wilks, 2015). Eastern practices of mindfulness were adopted to promote awareness and acceptance of the present moment (Linehan & Wilks, 2015). Traditional DBT spanned across 24 weeks and included mindfulness, interpersonal effectiveness, distress tolerance, and emotion regulation strategies (Linehan & Wilks, 2015). Essential features of DBT were telephone consultations, clinical team meetings, skills training, group settings, and individual psychotherapy (Linehan & Wilks, 2015). Empirical evidence has demonstrated DBT to be an effective intervention for BPD symptoms in adults (Groves, Backer, van den Bosch, & Miller, 2012; Lieb et al., 2004).

Because DBT was considered the gold standard for BPD symptoms, researchers have evaluated its impact on adolescents with BPD symptoms (Groves et al., 2012). Based on a review of 12 studies, Groves et al. concluded that DBT may be an effective treatment strategy for adolescents with self-harm behaviours, eating disorders, and aggressive behaviours. The review offered some empirical support for effectively reducing adolescent symptoms of depression, eating disorders, bipolar disorder, and impulsivity or aggressive behaviours. From a review of seven studies, MacPherson et al. (2013) concluded that adolescents had reductions in hospital visits, self-harm behaviour, and other BPD symptoms after DBT. The authors of both reviews strongly cautioned making assumptions about treatment efficacy, as each study delivered DBT differently and could not be directly compared (Groves et al., 2012; MacPherson et al., 2013). Despite these variations in treatment delivery, DBT still demonstrated positive treatment effects, possibly indicating DBTs delivery versatility. However, more randomized controlled trials are needed to definitively conclude that DBT is an empirically validated intervention for adolescents with BPD symptoms (Bass, van Nevel, & Swart, 2014; Groves et al., 2012; MacPherson et al., 2013; Neece et al., 2013). More recently, Mehlm et al. (2014) completed a randomized trial with 77 adolescents at an outpatient clinic and found a reduction in suicide ideation, self-harm, and/or depression symptoms at the end of 19 weeks of DBT compared to treatment as usual. Further, Mehlm et al. (2014) completed a one-year follow up and found that DBT treatment effects were far greater at reducing self-harm one year out compared to treatment as usual. These were important findings, as suicidality is often the first target in treatment to promote treatment acceptability and retention (MacPherson et al., 2013; Neece et al., 2013). The positive effects of DBT extend beyond decreases in observable and reported symptoms. One study has
found that DBT reduced amygdala hyperactivity which is involved with emotion regulation (Goodman et al., 2014). Overall, evidence indicates DBT may be an effective intervention for adolescents, as results of empirical and quasi-experimental studies indicate reductions in suicidality, depression symptoms, and BPD symptoms (Groves et al., 2012; MacPherson et al., 2013; Mehlum et al. 2014).

**Cognitive behaviour therapy.**

Since DBT is often the treatment of choice for BPD, there are few studies on other treatment modalities (O’Connell & Dowling, 2014). Cognitive behaviour therapy (CBT) uses cognitive reappraisal strategies to assist in emotion regulation strategies (Diedrich, Hofmann, Cuijpers, & Berking, 2016). CBT is considered the gold standard for treating mild to moderate levels of depression (Weersing & Brent, 2006). However, one randomized control trial has demonstrated CBT’s impact on reducing more severe symptoms of self-harm and suicidality for adolescents and adults (Slee, Garnefski, Van Der Leeden, Arensman, & Spinhoven, 2008). Participants were randomized in two groups: 12 sessions of CBT and treatment as usual. The authors of the study primarily focused on self-harm behaviours and did not specifically mention BPD features as criteria for recruiting participants. CBT significantly decreased symptoms of depression, and anxiety, while it increased self-esteem and problem solving skills compared to treatment as usual (Slee et al., 2008). CBT offered a reduced treatment length of 12 sessions (Slee et al., 2008) compared to standard DBT for adolescents with 24 sessions (Rathus & Miller, 2015). Results of the study added to the empirical literature for CBT as a treatment modality for more severe symptoms related to mood disorders. However, more research is needed to determine if CBT results in decreased BPD symptoms specifically.

**Emotional regulation therapy.**

DBT for adolescents may not be feasible for clinical settings due to duration and intensity of treatment delivery. Gratz, Tull, and Levy (2014) completed a randomized control trial in which they examined the impact of emotion regulation group therapy (ERGT) over 14 weeks with a 9-month follow up for 31 adult women with BPD and self-harm behaviour, compared to a waitlist condition of 30 women. ERGT was designed based on Linehan’s biosocial theory in which self-harm behaviours are considered maladaptive coping strategies for managing emotional dysregulation (Gratz et al., 2014). ERGT was designed to decrease self-harm behaviour by providing participants with alternative coping strategies for managing emotions (Gratz et al., 2014). ERGT included increasing awareness of emotions, teaching behaviours that were goal directed and that inhibited impulsive behaviours, strategies to change the intensity and duration of emotions, and acceptance to experience negative emotions (Gratz et al., 2014). Group therapy sessions contained six participants and were 90 minutes-long. They reported that ERGT had a significant impact on self-harm behaviour, emotional dysregulation, depression, BPD symptoms and quality of life compared to women in the waitlist condition. According to Gratz et al., 47% of the participants no longer engaged in self-harm behaviour half way through therapy and maintained this during the 9-month uncontrolled follow-up. The following outcomes were maintained or improved at the 9-month follow-up session: emotional dysregulation, BPD symptoms, and quality of life (Gratz et al., 2014). One limitation of this study was that it was difficult to determine if symptoms improved over time by some other variable or if ERGT treatment effects were responsible. A second limitation was that
generalizability of this treatment cannot extend to males or adolescents, as the study solely relied on self-reports from women. Despite these limitations, the study supported reducing therapy sessions for clinical feasibility and that emotional regulation strategies may significantly reduce symptoms of BPD.

**Mindful Self-Compassion**

Mindful self-compassion (MSC) is defined as the recognition of personal suffering with the intention to lessen distress (Germer & Neff, 2013). With over 200 studies since 2003 examining the impact of MSC, it has become an emerging treatment within the psychological community (Germer & Neff, 2013). Self-compassion includes the practice of self-kindness, mindfulness, and knowledge of common humanity (Germer & Neff, 2013). According to Diedrich, Hofmann, Cuijpers, and Berking, (2016) MSC was comparable to other validated emotional regulation strategies for major depression disorder, like cognitive reappraisal and acceptance strategies. According to Bernard and Curry (2011), DBT has yet to demonstrate improvements in self-compassion skills, nor has research determined if DBT increases mindfulness skills. In order to enhance DBT for adolescents, mindful self-compassion may provide additional emotion regulation strategies.

**MSC therapy.**

The inclusion of MSC in established therapies has been associated with improved psychological well-being across multiple studies for a variety of populations (Germer & Neff, 2013). Given MSC is a relatively new intervention, there is limited research to support its effectiveness for adolescents with BPD symptoms. However, one study has demonstrated MSC’s impact on the psychological well-being of adolescents without a mood disorder diagnoses. Galla (2016) assessed the impact of mindfulness and self-compassion for 132 psychologically healthy, but stressed, adolescents who attended a five-day meditation retreat. The research design included several measures of emotional well-being and perceived stress; the adolescents completed these self-report questionnaires before, after, and during a three-month follow-up meeting (Galla, 2016). Results indicated that changes in self-compassion specifically had a greater impact on improved emotional well-being compared to changes in mindfulness (Galla, 2016). Galla found that self-compassion directly correlated with decreases in depressive symptoms such as rumination, perceived stress, and negative affect (Galla, 2016). Although the study did not evaluate changes in severe symptoms of mood disorders for adolescents, it demonstrated that the delivery of mindfulness and self-compassion improved emotional well-being and overall life satisfaction for healthy, but stressed, adolescents.

According to Diedrich et al. (2014) MSC may be an effective coping strategy for severe symptoms of mood disorders presented in adults. Diedrich et al. stated that acceptance and cognitive reappraisal strategies are classified as emotional regulators, which are most likely responsible for decreased depressive symptoms. Diedrich et al. investigated whether self-compassion techniques could function as an effective emotional regulatory strategy. Diedrich et al. selected forty-eight participants based on a DSM-IV diagnosis of major depressive disorder (MDD). Over half of the participants had a diagnosis of comorbid mood disorders (Diedrich et al., 2014). The researchers induced a depressed mood and asked the participants to either wait, use cognitive appraisal, acceptance, or self-compassion strategies systematically (Diedrich et al.,
The researchers reported that MSC reduced depressive symptoms compared to the waiting condition, and that MSC compared similarly to other established emotional regulation strategies, such as cognitive appraisal and acceptance. The researchers also reported that subjects with higher depressive symptoms saw a greater reduction in symptoms with MSC compared to acceptance and cognitive reappraisal strategies. This indicates that MSC maybe an effective strategy to decrease severe depressive symptoms for adults with mood disorder diagnoses.

Finally, to provide therapy for individuals who have experienced significant trauma, Gilbert and Procter (2006) developed Compassion Mind Training (CMT); a self-compassion-centered therapy rooted in established CBT. Gilbert and Procter provided group therapy for six patients at an outpatient clinic. After completing 12 two-hour sessions, the patients reported significant reductions in depression, anxiety, self-criticism, shame, and avoidant behaviour. CMT provided patients with an opportunity to foster self-soothing techniques; a component not offered in CBT alone (Gilbert & Procter, 2006). The developers of CMT indicated that this new therapy may be best suited for individuals who have not adopted effective self-soothing techniques (Gilbert & Procter, 2006).

Since MSC is in its infancy, studies validating its impact on adolescents with BPD symptoms are limited. However, MSC seems to demonstrate promising coping strategies for healthy stressed adolescents and adults with various mood disorders. MSC may be an effective strategy for improving emotional regulation and psychological well-being, while decreasing symptoms of anxiety and depression. MSC can be easily integrated into well-established therapies and delivered in group settings.

Summary

It has been demonstrated that MSC can be integrated into other evidence-based treatments and improve the emotional well-being of adolescents. Early studies have indicated that MSC has similar impacts when compared to evidenced-based emotional regulation strategies, like cognitive reappraisal and acceptance strategies. Given that the BPD population experiences life-threatening symptoms, finding short-term treatments that significantly reduce the most severe symptoms is important. Additionally, effective short-term treatments may save resources, reduce costs, and improve wait times for treatment. Adding to the limited literature regarding alternative treatments for adolescents with BPD symptoms is warranted for further research. The present thesis compared two groups, DBT informed therapy and DBT informed therapy with MSC. It was hypothesized that incorporating MSC into an DBT informed therapy intervention would significantly decrease anxiety and depression symptoms compared to DBT informed therapy alone. To date, research has not investigated the impact of incorporating MSC with evidence-based interventions for adolescents with severe mood related symptoms. This thesis extends the research base for alternative treatments for adolescents with emotional dysregulation.

Word count: 3957
Chapter III: Method

Participants

Fifteen adolescents, four males and 11 females, with emotional dysregulation were selected to receive DBT informed therapy and fifteen adolescents, two males and 13 females, were selected to receive DBT informed therapy with MSC. Psychiatrists referred participants for treatment if they were experiencing increased symptoms of anxiety, depression, and other emotional regulation problems, such as self-harming behaviour. Participants were sequentially selected from this referral process and were interviewed prior to treatment by the treatment facilitators to determine suitability for group therapy. Criteria for inclusion were: age between 13 and 18, a diagnosis of mood disorder, and difficulties managing emotions, including either frequent self-harming behaviour or emotional outbursts when alone or with others. Participants were not required to receive this treatment exclusively. Therefore, some participants were also taking medications and possibly receiving other psychotherapies while attending group therapy. Exclusion criteria included complex medical conditions that prevented a participant from attending at least 80% of sessions, psychotic disorders, and significant cognitive delays.

Both treatments included a compulsory homework component. Participants who were selected for treatment agreed to this homework requirement prior to receiving treatment. Some of the participants had received previous treatment at the agency, either individual counselling or previous group therapy. Since both DBT informed therapy and DBT informed therapy with MSC treatments are relatively novel within the community, it is unlikely that participants would have received these treatments prior to beginning therapy. Participants were verbally informed and given a written document (Appendix A, Appendix B, or Appendix C, respectively), which described the study and the therapy that they would receive. Participants were informed about the purpose of the study, the benefits and risks associated with the treatment, and that they could withdraw at any time without penalty. Parents or guardians provided written informed consent and youth under 16 years of age provided assent. Patients who were 16 and older at the time of the treatment provided their own consent.

Both studies were reviewed by the Queen’s University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (Appendix D and Appendix E, respectively).

Measures

The researchers selected self-report questionnaires from the Beck Youth Inventories for Children and Adolescents: Second Edition (BYI-II) which contained the Beck Anxiety Inventory—Youth (BAI-Y) and the Beck Depression Inventory—Youth (BDI-Y; Beck, Beck, Jolly, & Steer, 2005) to evaluate the participants’ levels of anxiety and depression. The BAI-Y is a self-report questionnaire and assessed common childhood worry, fear, and physiological symptoms associated with anxiety while the BDI-Y assessed childhood depression according to the criteria outlined by the Diagnostic and Statistical Manual of Mental Disorders IV-TR (Hennington, 2010). Each questionnaire has 20 items and uses a 4-point Likert scale ranging from 0, indicating “never”, to 3, indicating “always”. Scores from the BAI-Y and BDI-Y have been translated into t-scores, where 50 represents the mean and 10 is the standard deviation (Hennington, 2010). Test-retest reliability was obtained after 1 week and was based on a
subsample of examinees (105 children and 65 adolescents; Hennington, 2010). Test-retest reliability coefficients included 0.74 - 0.93 for children aged 7 to 14 and 0.83 - 0.93 for adolescents (Hennington, 2010). For internal construct validity, test developers used factor analysis and found three main factors tested in the BYI-II (Hennington, 2010). When compared to other instruments measuring depression and self-concept, the BYI-II had strong content validity (Hennington, 2010). Discriminant validity was demonstrated by separating youth into clinical categories according to their diagnosis (Henington, 2010). The differences between the group scores were statistically significant with corresponding moderate to high effect sizes (Hennington, 2010). This means the inventories were able to define groups (Hennington, 2010). Hennington concluded that both the BAI-Y and BDI-Y are useful tests to measure childhood anxiety and depression for outpatient and inpatient settings. The BYI-II was selected due to ease of administration and relatively short time to complete. This measure is restricted and is not reproduced in this thesis, but a description can be found in Appendix F.

In order to measure self-compassion, the researchers administered the Self-Compassion Scale (SCS, Appendix G). The SCS is a self-report measure of self-compassion (Neff, 2003). The SCS includes 26 items and uses a 5-point Likert Scale ranging from 1, indicating “Almost Never”, to 5 indicating “Almost Always” (Cunha, Xavier, & Castilho, 2016). Cunha et al. evaluated this measure for adolescents. They assessed internal reliability using Cronbach’s alpha, which was very good for the overall measure (α= .88), while its subscales were adequate (between α= .70 and .79). Pearson correlations indicated high convergent scores with SCS and the Early Memories of Warmth and Safeness Scale (EMWSS) and high divergent scores with the Depression and Anxiety Stress Scales (DASS), demonstrating strong construct validity (Cunha, et al., 2016). After a review of the measure, results indicated that the SCS may be a useful tool to measure self-compassion for adolescents 14 and older (Cunha, et al., 2016).

The adolescents in the DBT informed therapy with MSC also completed the Building Resilience Group Therapy Feedback survey (Appendix H) after the last session. The survey had five questions which consisted of qualitative and rating scale questions. The information from the client perspective may be used to modify therapy delivery in the future.

Independent Variables

**DBT informed therapy.**

Manualized group DBT informed therapy was delivered by two experienced social workers over six sessions. Mindfulness was introduced during the first session and reviewed during each session. Following sessions included psychoeducation and behavioural and cognitive based coping strategies, while the last session was reserved for review. Details of sessions are outlined in Appendix I.

**DBT informed therapy with MSC.**

Manualized group DBT informed therapy with MSC was delivered by a behavioural therapist and a social worker over six sessions. The behavioural therapist was trained in providing mindfulness-based therapy and completed several workshops and training seminars related to mindfulness and self-compassion practices. The first session included group
introductions and psychoeducation. The following group sessions included psychoeducation, behavioural interventions, cognitive reappraisal strategies, assigned daily practices, and daily practice review. Sessions four introduced mindfulness, while session five introduced self-compassion by teaching practical skills. Session six was reserved for review of all previous sessions. Details about the sessions from the *Building Resilience* manual are found in Appendix J. The key difference between the comparison group and the experimental group was the addition of self-compassion and greater emphasis on mindfulness. Description of the differences between the comparison and experimental groups are found in Appendix K.

Setting and Materials

Both group therapies took place in an outpatient hospital setting. The therapists used manuals to deliver both DBT informed therapy and DBT informed therapy with MSC. The same therapists conducted both treatment groups. Material from the manual was presented by using handouts and activity sheets. Presentations were created on PowerPoint to provide participants with visual demonstrations for enhanced learning. The therapists provided participants with binders to keep homework assignments organized. Participants were asked to take binders home to complete homework and bring the completed homework back to the sessions. Reinforcement for bringing the binder and completing homework was provided through social praise and reinforcement stickers. The person with the most stickers in the group received a $10.00 gift card. The BAI-Y, BDI-Y, and SCSs were provided outside of the treatment sessions. They were scheduled before and after treatment.

Research Design and Research Implementation Procedures

This present study was an AB design comparing two treatment groups. The comparison group was six weekly 90-minute sessions of DBT informed therapy, while the experimental group included six weekly 90-minute sessions of DBT informed therapy with MSC. The DBT informed therapy treatment period occurred before the DBT informed therapy with MSC treatment period. Adolescents were divided into groups of six to ten participants for both treatment groups. Both treatments were provided to several different groups of participants. Therapies were delivered by two experienced therapists using manuals. Both treatment groups completed pre- and post-measures for anxiety and depression. The DBT informed therapy with MSC groups also completed pre and post measures in self-compassion. All assessments were paper-and-pencil tests and were completed in a private room in the hospital setting.

Analysis.

When the student researcher received the archival data, the data had been translated into *t*-scores. Both treatment groups contained 15 participants. However, one participant in the DBT informed therapy with MSC did not complete the BAI-Y at pre- and post-test. Analyses included assessing differences between pre and post scores on the depression and anxiety measures within and between both groups, as well as of the difference between pre- and post-scores on the self-compassion measure only for the participants who completed DBT plus MSC. All statistical analyses were conducted in SPSS. Paired samples *t*-tests were completed in order to establish if there were differences in depression and anxiety within groups after treatment. An analysis of covariance (ANCOVA) controlled for the pre tests, the covariate, to compare the pre and post scores for anxiety and depression between the two groups to determine if the DBT with
MSC treatment resulted in significantly greater decreases in anxiety and depression when compared to the DBT informed therapy only group. The student researcher also completed a two-tailed paired samples $t$-test comparing pre-treatment self-compassion scores to post-treatment self-compassion scores to determine if DBT informed therapy with MSC contributed to higher self-compassion for this group only. Representative quotes from the feedback surveys were also reported in the Results section.
Chapter IV: Results

Beck Youth Inventories – Second Edition Results

The student researcher hypothesized that BAI-Y anxiety and BDI-Y depression scores would decrease significantly more for subjects who participated in DBT informed therapy with MSC compared to subjects who participated in DBT informed therapy without MSC.

The student researcher completed several tests in order to determine if the data met the appropriate assumptions before conducting the ANCOVA. A test of normality indicated that all scores in both post-test groups were normally distributed and there were no outliers. Visual inspection indicated that there was a linear relationship between the covariate and the dependent variable for both measures, as required in order to conduct an ANCOVA. A homogeneity of regression slopes test was non-significant for both anxiety, $F(1,28) = 1.818, p = 0.190$ and depression, $F(1,30) = 3.849, p = 0.061$, which met the assumption for the ANCOVA. Finally, there were no differences between DBT informed therapy and DBT informed therapy with MSC at pre-test in mean levels of anxiety, $F(1,28) = 0.058, p = 0.812$, and depression, $F(1,30) = 0.566, p = 0.458$. In other words, the levels of depression and anxiety were the same in both treatment groups at pre-test, such that the two groups were similar on these variables pre-treatment. The data met all assumptions required to conduct the ANCOVA.

As noted above, the raw scores from the BYI-II were transformed into $t$-scores for comparison against normative data. The BYI-II provides $t$-scores for each subscale. A $t$-score of 70 and above is highly elevated, 60-69 is moderately elevated, 55-59 is mildly elevated, 54-45 is an average level, and less than 44 represents a lower than average level (Beck, Beck, Jolly, & Steer, 2005). Table 1 shows that the mean $t$-scores for the anxiety and depression subscales were highly elevated for both treatment groups at pre-test. Although the mean $t$-score on the anxiety measure decreased from pre-test ($M = 73.53, SD = 15.06$) to post-test ($M = 70.40, SD = 16.70$) in the DBT informed therapy group, the paired samples $t$-test revealed that this decrease was not statistically significant between pre and post scores on the anxiety measure, $t(14) = 1.194, p = 0.252$. Similarly, although participants in the DBT informed therapy with MSC mean $t$-scores on the anxiety measure also decreased from pre ($M = 74.86, SD = 14.61$) to post test ($M = 71.21, SD = 13.19$), the paired samples $t$-test revealed that there was no significant difference between pre and post scores on the anxiety measure, $t(12) = 1.393, p = 0.189$. Finally, although the DBT informed therapy with MSC group had a slightly greater decrease in anxiety scores compared to DBT informed therapy only, this difference was not significantly greater, $F(1,28) = 0.115, p = 0.738$. Results are presented in Table 1.
### Table 1

*Pre and Post Scores on Beck Anxiety Inventory Youth – Second Edition*

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>M Difference</th>
<th>t (df)</th>
<th>p</th>
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<tr>
<td>n</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
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<tr>
<td>Treatment 1 BAI-Y</td>
<td>15 73.53 (15.06) 70.40 (16.70)</td>
<td>-3.13</td>
<td>t(14) = 1.194</td>
<td>0.252</td>
<td></td>
</tr>
<tr>
<td>Treatment 2 BAI-Y</td>
<td>14 74.86 (14.61)  71.21 (13.19)</td>
<td>-3.65</td>
<td>t(12) = 1.393</td>
<td>0.189</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F (1,28)</th>
<th>p</th>
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<tbody>
<tr>
<td>0.115</td>
<td>0.738</td>
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</tbody>
</table>

*Note.* Treatment 1 = DBT informed therapy, Treatment 2 = DBT informed therapy with MSC.

Although participants’ mean t-scores on the depression scale decreased after receiving DBT informed therapy, the paired samples t-test revealed that the difference was not statistically significant between pre (M = 70.40, SD = 10.70) and post (M = 66.40, SD = 14.08) depression scores in the DBT informed therapy group, t(14) = 1.813, p = 0.091. Similarly, while the average t-score on the depression scale decreased after DBT informed therapy with MSC, the paired samples t-test revealed that this was not a statistically significant difference between pre (M = 74.60, SD = 18.79) and post (M = 70.27, SD = 13.78) scores in the DBT informed therapy with MSC group, t(14) = 1.253, p = 0.231. Although the DBT informed therapy with MSC group had a slightly greater decrease in depression scores compared to DBT informed therapy only, the addition of MSC did not demonstrate a statistical significant difference in depression scores when compared to DBT informed therapy only, F(1,30) = 0.100, p = 0.754. Results are presented in Table 2.
Table 2

Pre and post scores on the Beck Depression Inventory Youth – Second Edition

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>M Difference</th>
<th>t (df)</th>
<th>p</th>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment 1</td>
<td>15</td>
<td>70.40 (10.70)</td>
<td>66.40 (14.08)</td>
<td>-4.00</td>
<td>t(14) = 1.813</td>
</tr>
<tr>
<td>BDI-Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment 2</td>
<td>15</td>
<td>74.60 (18.79)</td>
<td>70.27 (13.78)</td>
<td>-3.65</td>
<td>t(14) = 1.253</td>
</tr>
<tr>
<td>BDI-Y</td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

\[ F (1,30) = 0.100 \]
\[ p = 0.754 \]

Note. Treatment 1 = DBT informed therapy, Treatment 2 = DBT informed therapy with MSC.

In summary, the inclusion of MSC did not result in greater reduction in anxiety or depression scores in comparison to DBT informed therapy only. Additionally, results indicate that neither intervention had a significant impact on scores of depression and anxiety. The raw data from the anxiety and depression measures are presented in Appendix L.

Self-Compassion Scale Results

Twelve participants in the DBT informed therapy with MSC completed pre and post tests on the standardized SCS. There are six sub-scales of self-compassion: self-kindness, self-judgement, common humanity, isolation, mindfulness, and over-identified items. As shown in Appendix G, a total self-compassion score can be calculated using reversed scoring and averaging the totals of the sub-scales. It was hypothesized that scores in self-compassion would increase after the introduction of MSC. A paired-samples t-test was completed using SPSS in order to determine if there was a statistical difference in scores after MSC was introduced. The analysis revealed that there was no significant difference in mean score before \((M = 2.03)\) and after \((M = 2.11)\) treatment, \(t(11) = -0.393, p = 0.702\). This suggests that the inclusion of MSC to established therapy did not have the effect of increasing self-compassion. Results are presented in Table 3. The raw data from the SCS measure are presented in Appendix M.
Table 3

**Pre and Post Scores on Self-Compassion Scale**

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>M Difference</th>
<th>t(df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized SCS</td>
<td>n=12</td>
<td>2.03 (0.75)</td>
<td>2.11 (0.57)</td>
<td>-0.08</td>
<td>t(11) = -0.393</td>
<td>0.702</td>
<td></td>
</tr>
</tbody>
</table>

**Feedback Survey**

Participants in the DBT informed therapy with MSC completed a feedback survey which evaluated the therapy and their progress. Group members were asked how they would rate the therapy from 0 (not helpful) to 10 (extremely helpful), what they liked about the group, what did not like about the group, what skills they would use in the future for managing emotions, and how much of the practice (homework) did they complete (0%-100%). Thirteen out of sixteen participants rated the group a 5 or higher for helpfulness. One participant stated “I liked that I was introduced to new things to help me cope through my problems”. Another participant stated that “It didn’t go on long enough. It was okay, I think that with more time I could learn more about myself and other things that are helpful”. Half of the participants stated that they would use the self-care kit in the future for managing emotions. Finally, 12 of the 16 participants reported that they completed at least 50% of their homework or higher. Results from the feedback surveys are presented in Appendix N.
Chapter V: Discussion and Conclusion

Summary

The present thesis compared two six-week treatments, DBT informed therapy with MSC and DBT informed therapy only, for adolescents with emotional dysregulation in an outpatient setting. The development of well-established therapy is essential for adolescents with BPD traits as early interventions may reduce life threatening symptoms and interrupt BPD prognosis (Chanen et al., 2008). DBT is considered the “gold standard” for the treatment of the psychological symptoms of BPD (Groves et al, 2012). Formal DBT spans across 24 weeks (Rathus & Miller, 2015), making it challenging for agencies to implement due to time, cost, resources, and client attendance. The agency offered reduced treatment sessions for adolescents with emotional dysregulation. Some evidence suggests that MSC may be an effective emotion regulation strategy for patients with mood related disorders (Diedrich et al., 2014). The student researcher hypothesized that there would be a greater decrease in symptoms of anxiety and depression in the DBT informed therapy with MSC group compared to the DBT informed therapy only group.

The student researcher collected and analyzed archival data from both treatment groups. While there were small changes on both the anxiety and depression measures in the hypothesized direction, these changes were not statistically significant within either group or between them. Mean t-scores remained at highly elevated levels, except depression scores in the DBT informed therapy only group, which decreased to moderate levels. Even though depression levels decreased to a moderate level, the mean t-score for depression at pre-test just met the cut off for highly elevated levels, allowing even slight decreases to move the average to the moderate levels. Overall, the hypothesis that DBT informed therapy with MSC would result in greater decreases in scores of anxiety and depression was not supported.

The student researcher also collected archival data from the standardized SCS in order to determine whether the inclusion of MSC resulted in increased levels of self-compassion. The DBT informed therapy with MSC group completed pre and post SCSs. A total self-compassion score was calculated by summing the mean scores of each subscale on the measure. A score between 1.0-2.5 indicates low level of self-compassion, 2.6-3.5 indicates moderate levels, and 3.6-5.0 high levels (Neff, 2003). At pre-test, self-compassion scores were below average levels ($M = 2.03$) and only increased slightly at post test ($M = 2.11$) to below average levels and did not reach statistical significance. Therefore, the hypothesis that MSC would significantly increase self-compassion was not supported. The delivery of MSC may have impacted the non-significant result. MSC was delivered during the second last session and only presented once. MSC requires practice to receive benefits; therefore, the participants may not have had enough time to practice or to learn the new concepts. Collection of follow up data may be helpful to determine if the practice of MSC over time results in greater scores in self-compassion.

Strengths

This pilot study had many strengths in service delivery, the assessment of a new therapy in Kingston, the diversity of participants, and positive feedback from participants. Both treatments were provided in an outpatient setting and were facilitated by experienced therapists,
ensuring quality service. The reduced treatment length of six sessions, allowed the agency to run groups more often and thus reduce waiting time for patients. It may not be realistic to reduce patients’ longstanding or severe symptoms of depression and/or anxiety within six weeks. Despite this, there was a slight reduction in symptoms which may have replaced some self-harm behaviours with alternative emotional regulation strategies. After patients received group therapy, they were then referred for other services provided by the agency to manage their longstanding anxiety and depression symptoms. The second strength of this pilot study was that it provided early data on a new therapy offered in Kingston; MSC for adolescents is currently not offered at other agencies in Kingston. There is a growing need to develop effective therapies for adolescents with emotional dysregulation and BPD traits. This pilot study contributed to the limited literature on the treatment of adolescents with emotional dysregulation and assessed the effect of the current therapy used at the agency. The results of this thesis may also aid the agency in developing more effective therapies in the future. The third strength of the study was that the participants varied in severity of diagnosis. Due to varying levels of anxiety and depression among group members, the participants were able to provide other perspectives and solutions to problems for their fellow group members. Lastly, satisfaction surveys were completed by group members in the DBT informed therapy with MSC group. The results indicated that most participants enjoyed therapy and found that the skills taught in group were helpful to them.

**Limitations**

There were several limitations to the present study including: treatment length, sample size, gender representativeness, participant recruitment, self-report measures, and facilitator differences. First, the length of treatment may have contributed to the lack of statistically significant change. Reduced treatment length of six weeks may have impacted skill acquisition. Personality disorder traits are marked as pervasive and enduring symptoms that are inflexible and difficult to change (Nevid et al., 2015). Therefore, this population may benefit from intensive long-term treatment in order to significantly reduce psychological symptoms (Nevid et al., 2015). Increased sessions may allow adolescents to develop skills over time, as well as seek assistance from therapists. Second, the small sample size of 15 in each treatment group may have contributed to a lack of power in the statistical analysis. A larger sample size of at least 30 participants in each group may have resulted in significant differences, especially since the observed differences in scores trended in the hypothesized directions of decreased anxiety and depression and increases in self-compassion. Third, the study included four males in the first treatment group and two males in the second treatment group. More even representation of genders may support the use of this therapy for males and females. Fourth, recruitment of participants was based on sequential selection and was not randomized, creating a potential sampling bias. Fifth, the measures were self-report questionnaires which may have impacted the validity of each measure. Participants may have under-reported improvements if they desired more therapy or may have developed new insights about their symptoms and over-reported symptoms based on a new awareness. Lastly, since treatments were facilitated by separate therapists, the delivery may have been variable and therefore not equally comparable. Overall, these limitations most likely contributed to the lack of significant differences between groups. Not only was the hypothesis not supported, but DBT did not demonstrate significant decreases in anxiety or depression, contrary to previous studies. It is important to recognize, however, that previous studies that supported the use of DBT did not use six session or less.
Multilevel Challenges

Multiple challenges may arise when providing group therapy for adolescents with BPD traits and other mood related disorders. Client compliance, program delivery, agency resources, and societal beliefs may have impacted the results of this pilot study. These issues are addressed below.

Client.

Some clients had difficulty with homework compliance. Those who frequently did not complete the assigned work stated that they forgot to complete it during the week or lacked motivation to complete the work. Lack of motivation is understandable when working with adolescents with emotional dysregulation, as mood may impact motivation. Additionally, some clients would forget to bring their binders to the sessions. In these situations, therapists were able to provide these clients with the necessary material for that session, however this depleted time and resources during the sessions. Homework compliance is an essential component to the success of therapy. And, it is possible that if homework compliance was a key focus of therapy, greater decreases in psychological symptoms would have been greater.

Program.

DBT informed therapy with MSC was manualized to ensure therapy was consistent across multiple groups. However, when clients were experiencing difficulties with the material, the therapists attended to client needs rather than adhering to the timeline of the session. For example, one client required additional time with a new concept during a group therapy session. Time and resources were given to this client, thereby, delaying scheduled material within the session. In this case, material from the previous session was included in the next session. Sessions were modified to meet the needs of the clients, which varied the delivery of the sessions, possibly providing inconsistent therapy delivery across groups.

Agency.

The agency worked to provide services for patients who were admitted. After group therapy, the patients were able to access other services within the agency to continue their treatment. Access to therapy for every patient who requires it continues to be a challenge for the agency’s resources. Patients who declined group therapy, lived in rural areas, or who were unable to access reliable transportation were less likely to attend sessions. If therapy was provided for these patients, there would have been a larger sample size. The agency is currently working to increase access for patients who decline group therapy or who are unable to attend sessions due to transportation limits by providing services online. Increasing access to services will not only improve future studies, but more importantly, provide services for adolescents who were unable to receive any therapy.

Society.

Therapists have been reluctant to make BPD diagnoses during adolescence due to social stigma (Laurensen, Hutsebaut, Feenstra, Busschbach, & Luyten, 2013). Therapists believed that making a diagnosis would label adolescents at an early age, possibly isolating them from
Personality disorder implies that the diagnosis is lifelong, making treatment difficult if not impossible (Nevid et al., 2015). This is a misconception, as treatments have demonstrated decreases in psychological symptoms long-term (Mehlum et al., 2014; Nevid et al., 2015). Without a diagnosis, patients are sometimes unable to receive appropriate treatment which could decrease severity of symptoms and improve quality of life (Miller et al., 2008). It is important to recognize the limitations that stigma creates when implementing treatment, as this could have an impact on adolescents’ belief that their psychological symptoms can improve.

Implications for the Behavioural Psychology Field

This pilot study added to the behavioural psychology field by taking a first look at a new therapy, MSC, for adolescents with emotional dysregulation or BPD traits. MSC is a relatively new therapy modality that has recently grown in popularity within the psychology field. While the results of the current study did not indicate that the interventions resulted in changes in anxiety, depression or self-compassion scores for either group, this was not surprising given the limitations noted above. It is hoped that future research will address these issues. DBT informed therapy with MSC is rooted in behavioural principles, therefore the study extends literature for the behavioural psychological community. The study has provided the agency with data analysis from multiple groups within the agency which will add to future studies implemented at the agency. Behavioural therapists and other professionals were responsible for implementing the DBT informed therapy and MSC, which expands the behavioural psychology field to multidisciplinary perspectives. The agency will continue to use DBT informed therapy with MSC for adolescents with emotional dysregulation.

Recommendations for Future Research

More research is needed in order to determine if the inclusion of MSC adds to the effectiveness of DBT in decreasing depression and anxiety scores and increases self-compassion scores in adolescents with BPD symptoms. Treatment length, assessment of MSC, larger sample size, sample characteristics, homework compliance, and measures for psychological symptoms could be controlled better in future research. The recommended treatment length for DBT is 24 weeks (Rathus & Miller, 2015). Participants possibly would likely have improved skill acquisition if there were more than six sessions. Further, MSC has only been introduced in one group. Since MSC is a new therapy and is not offered within the community, participants might benefit from additional MSC skill-building sessions. Future researchers could examine if MSC alone results in decreases of emotional dysregulation symptoms for adolescents. Larger sample sizes are needed for improved statistical power in future studies. Equal representation of males and females are needed for future research to determine if therapy is effective across genders. Overcoming the barriers to homework compliance could aid therapists in supporting patients who have difficulties completing assigned tasks, thereby decreasing psychological symptoms. The measures selected primarily focused on two mood-related symptoms of emotional dysregulation, depression and anxiety. Future research could include additional measures to determine if DBT informed therapy with MSC can reduce other psychological symptoms related to BPD traits, specifically emotional dysregulation, self-harm behaviours, and impulsivity. Ideally, replication studies and randomized control studies are needed to expand the limited literature.
Conclusion

This pilot study added to the limited literature for treatment for adolescents with emotional dysregulation and/or BPD traits. Although the results were not significant, the data trended in the hypothesized directions. Participants were offered additional services within the agency and community to enhance their growth. More research is needed in order to determine if the inclusion of MSC results in reducing treatment length, cost, and resources and if it provides enhanced therapy for under-serviced adolescents.

Word count: 9921
References


Appendix A

Consent Form for Comparison Group Participants

LETTER OF INFORMATION & CONSENT FORM

ATTENTION:

If 16 years of age and older: Adolescent is hereafter “The Participant” and can give his/her own consent to participate.

If under 16 years of age: Adolescent is hereafter “The Participant” and parent or guardian must consent to their adolescent’s participation. The participant also signs an Assent Form to agree to participate.

BACKGROUND INFORMATION: (Overview of study)

We are inviting adolescents taking part in the Mindfulness group at [Redacted] Hospital to participate in a research study. The study is a collaborative project between [Redacted] Hospital (Dr. S. Khalid-Khan, Ms. B. Blaney, and Dr. J. Smythe), Queen’s University (Dr. L. Booij (PI), Ms. L. Schumann, Dr. K. Harkness, and Dr. I. Johnsrude), and Trinity College in Dublin, Ireland (Dr. Thomas Frodl).

The purpose of this study is to examine cognitive, emotional, and biological changes during and after Mindfulness-based Cognitive Therapy for depression in adolescents. [Redacted] or another member of the research team will read through this consent form with participants, describe procedures in detail and answer any questions they may have. Participation in the study involves an interview and questionnaires at the hospital directly after prescreening for the group, and two visits to the [Redacted] Psychology Building (Humphrey Hall) and fMRI Facility in the [Redacted] Centre for Neuroscience Studies, which is located in the lower level of the Cancer Research Institute. The two visits to [Redacted] campus will each last about 2 hours.
DETAILS OF THE STUDY

1. Aim of the study

As stated above, the aim of this study is to examine cognitive, emotional, and biological changes after Mindfulness-based Cognitive Therapy for depression in adolescents. The participant will be asked to report on aspects of his/her personal history, how he/she deals with life stressors, as well as perform a computerized task. The assessment also consists of an Functional Magnetic Resonance Imaging or fMRI scan (lasting approximately 45-60 minutes, including set up time). The scanner uses a strong magnetic field to create detailed images of brain structure and function. Additionally, we would like to collect a saliva sample for genetic research (deoxyribonucleic acid; DNA; information necessary for the proper development and function of living organisms). Using the results, we can investigate whether changes in depression symptoms are related to the structure and function of certain brain regions and how changes in symptoms and therapy can change the expression of the DNA (so called DNA methylation).

2. Description of visits and tests to be performed as part of the study

If the participant agrees to participate, the research consists of three parts: (1) a hospital interview and seven short questionnaires (if the participant prefers, these can be done directly following the prescreening with Ms. [REDACTED]; approximately 1.5 hours), (2) the pre-treatment session including a functional magnetic resonance imaging (fMRI) scan in the [REDACTED] Centre for Neuroscience Studies fMRI Facility (approximately 2 hours), and (3) the post-treatment assessment including a fMRI scan (approximately 2 hours). Thus, one scan will occur before the Mindfulness group treatment in Hotel Dieu has begun (pre-treatment), and one will occur after completion of the group treatment (post-treatment). During these sessions, the participant’s brain will be imaged while he/she is lying in a 3 Tesla MRI scanner. At the completion of all three parts, the participant will receive a $100 gift certificate to a store (one of three options: Bestbuy, Chapters/Indigo or Lululemon). If the participant is not able to participate in both fMRI scans, he or she can still participate in the other aspects of the research and will receive a $50 gift card.
**What does participation involve?**

**Hospital Interview**

a) After being referred to the group by Dr. [redacted] and then prescreened by Ms. [redacted], participants and parents will be directed to Ms. Lyndall Schumann who will explain the research component and obtain informed consent to participate (participants under the age of 16: this form will be signed by the parent and the participant will sign an assent form to agree to participate in the research project).

b) Participants will be interviewed by Ms. [redacted] and, if they choose to do so at that time, complete the seven short questionnaires. Estimated time for this session is 1.5 hours. A date and time for the pre-treatment assessment will be set (see below).

**Pre-treatment Session**

c) Upon arrival in the Queen’s Psychology building, participants will have a 45-minute interview regarding their background and questions about the presence or absence of adverse experiences in childhood. This interview will be audiotaped and stored with other confidential information. Then participants will complete a 10-minute computerized task and give a saliva sample (participants will spit into a tube; see Page 5 of this form).

d) The participant will then be led by a member of the research team to the Queen’s Centre for Neuroscience Studies fMRI Facility (5 minute walk). There the participant will begin by filling out a checklist and questionnaire to make sure he/she is eligible for an fMRI scan. This questionnaire will take about 5 minutes. Participants must have no history of chronic neurological disorders, accidents involving prolonged loss of consciousness, or long-term psychoactive medication use. Participants are also not eligible for the MRI scan if they have orthodontic braces or appliances that cannot be removed at the time of the scan. If participants are pregnant or are trying to conceive they will not be eligible. If there is any uncertainty regarding whether or not a participant is pregnant and she wants to participate in the study, we will provide a pregnancy test that must be done prior to the experiment.

e) Prior to the scan, the participant will be familiarized with a 15-minute task that he/she will be asked to do in the scanner, which will consist of looking at pictures with different emotions (positive, negative, or neutral) and answering “yes” or “no” to questions by pressing one of two buttons.
f) Participants will be asked to remove or change out of any clothes that contain metal that will be
near the area being imaged, and they will be asked to remove their shoes. Please try to wear
clothing containing no metal, or to bring a change of clothing. Metal in zippers, snaps, and the
wire and metal clasps in some bras can interfere with the imaging. Many shoes contain metal as
well. For imaging the brain, the snaps and zippers in jeans or other pants are far enough from the
area being imaged that they do not cause a problem.

g) Participants will be given a set of earplugs to wear in the scanner and then asked to lie on their
back on the well-padded bed of the magnet. Pillows will be placed under their legs for comfort
and a blanket will be placed over their legs if the participant wishes. A head coil will be placed
over the participant’s head. This is fitted with a mirror so that the participant can see out of the
magnet towards his/her head or feet. The participant and the bed will then slide into a long tube
(the magnet).

h) The participant will need to keep still while the images are taken. To help him or her, we will
make the participant as comfortable as possible and we will pack soft foam around his or her head
if needed.

i) The MR system has a two-way intercom for communication. Because scanning can be quite
noisy, the participant will also be given an alarm bulb so that he/she can call the researcher or
operator during the scan if something is wrong or he/she needs to come out.

j) During the scan, the participant will first have two sessions of 10-minutes each where he/she will
only be required to rest and lie still with eyes closed. The first part (called anatomical MRI) gives
us a clear picture of his/her brain, and the second (called diffusion tensor imaging) tells us about
the connections between different parts of the brain. Next, there will be a 6-minute session where
we will ask participants to lie still with his/her eyes open while we measure his/her brain activity
at rest. Finally, we will ask participants to perform the 15-minute task, which will consist of
looking at pictures with different emotions and orientations (horizontal or vertical). Participants
are asked to respond “yes” or “no” to questions regarding the emotional content and orientation
of the picture by pressing one of two buttons. Overall, the amount of time spent in the scanner
should amount to about 40 minutes. The whole scanning session, including set up time, should
last between 45 minutes and one hour.

Mid-session Questionnaire

k) The mid-session assessment will take place during one of the Mindfulness sessions at Hotel Dieu.
It will consist of re-administration of a short questionnaire (approximately 10 minutes).
Post-treatment Session

1) After all 6 group sessions at Hotel Dieu Hospital, the participant will be contacted by Ms. Schumann or another experimenter to set up a mutually-agreeable time for the post-treatment assessment. The Post-treatment assessment will consist of six of the same questionnaires, computerized task, and fMRI scan. The procedures are identical to those described in the pre-treatment assessment.

The participant may also be contacted three months after the end of the group treatment in order to follow up. Should participants wish to participate, they will complete a few of the same questionnaires and computer task.

3. Exclusions/Contraindications

The following are contraindications for a magnetic resonance imaging study:

- Pacemaker
- Aneurysm Clip
- Heart/Vascular Clip
- Prosthetic Valve
- Metal Prosthesis
- Claustrophobia
- Metal fragments in body
- Tattoos and piercings (piercings must be removed prior to scanning)
- Pregnancy
- Transdermal Patches (must be removed prior to scanning. The participant is advised to bring an additional patch to reapply post scanning)

Participants will also be excluded from the study if they are:

- Actively suicidal
- Currently abusing drugs or alcohol and
- Participants may not be able to have the MRI if they have orthodontic braces (unless they can be removed by the participant at the time of the scan), but can participate in the rest of the study.

4. An explanation of the special research techniques that will be used

a) fMRI

The MRI scanning procedure is very much like other medical imaging used in hospitals, but participants will not be exposed to x-rays. This MRI machine uses a strong magnet and radio waves to make images of the interior of the body. Participants will not feel either. The MRI being used in this study is a 3 Tesla MRI that is twice that used for most clinical imaging, although 3 tesla systems
are becoming more common in hospitals. The levels of magnetism and radio waves used in the MRI have not been shown to cause harmful effects. However, the MR scanner uses a very strong magnet that will attract metal. Therefore ALL metallic objects must be removed from a participant’s person before he/she approaches the scanner. Those with a cardiac pacemaker or a metallic clip in their body (e.g., an aneurysm clip in your brain or an I.U.D.) should not participate in any MRI study. In addition, credit cards and other cards with magnetic strips should also be removed as these will be damaged. (These items will be kept safe for the participant).

Participants will be in voice contact with the operator, and the operator will be able to see them via a camera. Participants may ask the operator to stop the experiment at any time. Participants should ask to stop the experiment if they feel tired, claustrophobic, or uncomfortable.

b) DNA analysis from saliva sample

We want to investigate how Mindfulness treatment and depressive symptoms affect the brain and the DNA. Simply, DNA methylation is a process that happens to DNA, where a chemical component (a methyl group) is added to DNA, which can affect the functioning of the gene by turning its activity on or off. DNA methylation is influenced by the environment, for example by stressors happening early in life. To assess DNA methylation, we will require participants to donate 3-6 ml of saliva (approximately one tea spoon) into a tube. Participants should not to eat or drink anything 30 minutes before the saliva sample is collected. Samples will be securely stored in Dr. [redacted] laboratory until further analysis. DNA analyses will be performed in the laboratory of Dr. [redacted] Liu, in the Queen’s University department of Psychiatry. Participant samples will be identified by participant code only, and Dr. [redacted] and his team will not have access to any personal information (e.g., names, etc.) of any participants. DNA can be used for future related studies conducted by Dr. [redacted] and her team 10 years after the start of this study if the participant (or parent if participant is under the age of 16 at the time that this consent form is signed) gives special permission to do so. All DNA will be destroyed after 10 years (September 2023).

5. Advantages

There are no direct advantages from participation in this research project. However, the knowledge acquired will contribute to scientific advancements. It is our hope that a greater understanding of
how Mindfulness treatment works will lead to the identification of adolescents at risk of developing depression and improve methods to prevent and treat chronic recurrent depression.

6. **Risks**

There are no known risks involved with Magnetic Resonance Imaging when all the necessary steps of precaution are undertaken. However, the MR scanner uses a very strong magnet that will attract metal. Therefore ALL metallic or magnetic objects must be removed from a participant’s person before he/she approaches the scanner. Parents/guardians will be invited to sit outside the resonance magnetic imaging zone during the scanning. Verification of any contraindication will be strictly reinforced by the technologist on duty in the brain-imaging center.

The requirements imposed on the use of Magnetic Resonance Imaging may cause certain discomfort due to the need to remain still during the length of the examination and the noise generated by the scanner when images are being acquired. Participants will be provided with earplugs to minimize noise. Participants may also feel a certain sense of stress or a sense of claustrophobia. Should participants experience discomfort during the scan, they may withdraw at any time. This option will be explained to each participant.

Although this is not a diagnostic scan and any images obtained are for research purposes only, it is possible that the MR scan may disclose an unknown abnormality. In this event, a medical imaging specialist will review the images and a report will be sent to the participant’s physician. The researchers directly involved with this procedure do not have the credentials to diagnose medical conditions.

7. **Confidentiality**

All data gathered as a part of this project is confidential. There is the risk of loss of confidentiality for participants only if during any assessment they (a) disclose involvement in the abuse of children or elderly individuals, (b) disclose being the victim of abuse (if under age 16), or (c) disclose threat to seriously harm self or others. If an adolescent discloses current abuse or severe neglect the interviewer will inform Child and Family Services and the adolescent’s treatment provider.

All information is identified using a participant code and no name will be attached to confidential information. Only the researchers directly related to this study will have access to the data files and
the subject codes. As outlined above, saliva samples will only be identified using participant codes, and those researchers performing DNA analyses will not have access to participant names or any other personal information. Participants will not be identified in any publication or reports.

8. Voluntary nature of study/Freedom to withdraw or participate

Participation in this study is voluntary. Participants may withdraw from this study at any time and their withdrawal will not affect their current or future medical care. Participants are not obliged to answer any questions that they find objectionable or which make them feel uncomfortable. If participants withdraw, no more information will be collected from them. When a participant indicates that he/she wishes to withdraw, the investigator will ask if the information already collected can be used. If the participant does not provide consent for the use of this information, it will be destroyed.

9. Withdrawal of subject by principal investigator

The study director may decide to withdraw a participant from this study if:

1) He/she does not meet the criteria for the study, including those mentioned in the Magnetic Resonance Screening Form.
2) He/she meets any of the exclusionary criteria listed above.
3) He/she is unable to perform the tasks requested.
4) He/she misses sessions or does not come to sessions on time.

10. Liability

In the event that a participant is injured as a result of the study procedures, medical care will be provided to him or her until resolution of the medical problem. By signing this consent form, participants do not waive their legal rights nor release the investigator(s) and sponsors from their legal and professional responsibilities.

11. Compensation

As previously outlined, participants who have two fMRIs will each receive a $100 gift certificate after the last study session for participating in this study. Participants who are not able to have fMRI scans but still participate in the rest of the study will receive a $50 gift card. Participant families will
be compensated up to $20 for travel expenses and parking. In addition, participants will receive a black and white picture of their brain.

### 12. First Nations Elders

If you are a First Nations person, or an indigenous person who has contact with spiritual elders you may want to talk with them before you proceed with being part of this experiment. Elders have reservations about genetic procedures.
SUBJECT STATEMENT AND SIGNATURE

I have read and understand the consent form for this study. I have had the purposes, procedures and technical language of this study explained to me. I have been given sufficient time to consider the above information and to seek advice if I chose to do so. I have had the opportunity to ask questions which have been answered to my satisfaction. I have named Dr. ______________ at ______________ as the physician to be contacted for follow-up purposes. I am voluntarily signing this form. I will receive a copy of this consent form for my information. If at any time I have further questions, problems or adverse events, I can contact:

Dr. [Name]  Ms. [Name]
Assistant Professor  PhD Student, Clinical Psychology

[Redacted Address]

Phone: 613-533-6000 ext 78158

If I have questions regarding my rights as a research participant I can contact
Appendix B

Assent Form for Comparison Group Participants
Adolescent Assent Form

I understand that the aim of this study is to learn more about how Mindfulness treatment works to treat the cognitive, emotional, and biological aspects of depression in adolescents.

I understand that the study involves an interview and questionnaires at the hospital directly after prescreening for the group, and two visits to the Psychology Building and fMRI Facility in the Centre for Neuroscience Studies, which is located in the lower level of the Cancer Research Institute. That means that I will need to come to the campus two times: once before the first session of the Mindfulness treatment group, and once after the group is over, and that these appointments can be made to fit into my (and my parent’s) schedule. Each visit will take about 2 hours.

I understand that some information (about my diagnosis and medication) will be passed from my psychiatrist to the researchers.

I understand that I will be asked some questions in person (interviews), as well as fill in some questionnaires dealing with some personal information. I will also be asked to do a task on the computer with reading words and deciding whether they describe me. I will also spit into a tube to give a saliva sample so that the researchers can take it to their laboratory and extract DNA (Deoxyribonucleic acid), which contains important genetic information.

I will get a brain scan, or a Magnetic Resonance Image (MRI) scan. The MRI scanner is a big machine that uses a strong magnet and radio waves to make images of the inside of the body. I will lie down on the scanner bed and the machine will scan around me. I won’t feel anything from the strong magnet and I won’t be harmed by the MRI scanner. The scan will take about 40 minutes. I will have an intercom in the MRI scanner and will be able to tell the MR operator to stop if I feel uncomfortable or tired at any time. I will need to wear clothes without metal and remove earrings, piercings etc. I’ll also go through a checklist beforehand to make sure I can have an MRI. Pregnant females shouldn’t have an MRI, so I may have to take a quick pregnancy test (it will be provided at no cost to me). If I cannot have or do not want to have an MRI, then I can still participate in the rest of the study.

I understand that one interview will be audio-taped. I understand that these tapes will be private, and heard only by Dr. and her helpers. I know that I will be assigned a number, and that my name will not be connected to any of the information, including the audiotape of my interview.

I understand that I may skip any question that I do not want to answer. I understand that I may get out of the study at any time without giving a reason, and that nobody will be mad at me if I do. My parent can also decide, at any time, that we don’t want to be in this study any longer.
I understand that after the two visits and two MRI scans I will get a black and white picture of my brain and a $100 gift certificate to either Bestbuy, Lululemon, or Chapters/Indigo to thank me for my participation (I get to choose the gift certificate from these three options). If I cannot complete the two MRI scans, I will receive a $50 gift card if I participate in the rest of the study. My family will also receive $20 for parking and transportation costs.

I understand that if I am a First Nations person, or an indigenous person who has contact with spiritual elders I may want to talk with them before I proceed with being part of this experiment. Elders have reservations about genetic procedures.

I understand that I may contact Dr. [masked] or any of her helpers, at any time during the study, if I have questions. Dr. [masked] is a professor at Queen’s University, and her helpers are students at [masked] University. Dr. [masked] can be reached at (613) 533 6000 ext 78158. I also understand that I may contact the Head of the Psychology Department (Dr. [masked]) or the Chair of the [masked] University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (Dr. [masked]) if I have any concerns about the project that I do not want to discuss with Dr. [masked] or her helpers or my therapist or my psychiatrist.

Circling “I agree” below means that I would like to participate in the study.

I agree

I do not agree

Signature: _____________________________ Date: ______________
Appendix C

Consent Form for Experimental Group Participants

BACKGROUND INFORMATION

Your child is being invited to participate in a research study directed by Dr. [Redacted] and Dr. [Redacted] evaluating the impact of two dialectical behaviour therapy groups in adolescents with chronic coping difficulties and problems with emotional regulation. One of the members of the research team will read through this consent form with you and your child and will describe procedures in detail and answer any questions you may have. This study has been reviewed for ethical compliance by the Queen’s University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board.

DETAILS OF THE STUDY

1. Aim of the study:

To study the impact of dialectical behaviour therapy groups in adolescents with coping difficulties. Specifically, the study will look at improvements in: impulse control, emotional regulation and awareness, and symptoms relating to anxiety, depression, and substance use. Your child will be considered for the study if they:

a) Are 13-19 years of age

b) Have assented to take part in the dialectical behaviour therapy group program (either Living Out Loud or Managing Powerful Emotions)

c) Are competent to assent to participate

2. Description of the study:

As well as participating in the dialectical therapy group to which your child has been invited previously (either the LOL or MPE group), your child will be asked to attend both a pre- and post-screening appointment. During these appointments your child will complete a hospital interview, three questionnaires and a saliva sample. Inpatient admissions, ER visits, demographic information and past psychiatric diagnoses will be collected from your child’s personal health records. Parents will be given the option to participate in six parent-only education sessions, which will provide information regarding dialectical behaviour therapy and attachment concepts.

With the saliva sample, we will assess DNA, as we want to investigate how dialectical therapy affects the DNA. Simply, DNA methylation is a process that happens to DNA, where a chemical component (a methyl group) is added to DNA, which can affect the functioning of the gene by turning its activity on or off. DNA methylation is influenced by the environment, for example by stressors happening early in life. To assess DNA methylation, we will require participants to donate 3-6 ml of saliva (approximately one tea spoon) into a tube. Participants should not to eat or drink anything 30 minutes before the saliva sample is collected. Samples will be securely stored at Hotel Dieu Hospital until further analysis. DNA analyses will be performed in the laboratory of Dr. [Redacted] in the Department of Pharmacology at [Redacted] University. Participant
samples will be identified by participant code only, and Dr. Szyf and his team will not have access to any personal information (e.g., names, etc.) of any participants. DNA can be used for future related studies conducted by Dr. Booij and her team 10 years after the start of this study if the participant (or parent if participant is under the age of 16 at the time that this consent form is signed) gives special permission to do so. All DNA will be destroyed after 10 years (September 2025).

3. Risks/Side Effects

There are no known or anticipated risks to your child’s participation in this study.

4. Benefits

While your child may not benefit directly from this study, results from this study may improve the understanding of the impact of dialectical behaviour therapy groups on coping difficulties in adolescents and may benefit others in the future.

5. Exclusions

Your child will not be considered for the study if they have:

a) Severe substance use and dependence
b) Active legal charges

6. Confidentiality

All data gathered as a part of this project is confidential. There is the risk of loss of confidentiality for participants only if during any assessment they (a) disclose involvement in the abuse of children or elderly individuals, (b) disclose being the victim of abuse (if under age 16), or (c) disclose threat to seriously harm self or others. If an adolescent discloses current abuse or severe neglect the interviewer will inform Child and Family Services and the adolescent’s treatment provider.

All information is identified using a participant code and no name will be attached to confidential information. Only the researchers directly related to this study will have access to the data files and the subject codes. As outlined above, saliva samples will only be identified using participant codes, and those researchers performing DNA analyses will not have access to participant names or any other personal information. Participants will not be identified in any publication or reports.

7. Voluntary nature of study/Freedom to withdraw or participate:

Participation in this study is voluntary. Participants may withdraw from this study at any time and their withdrawal will not affect their current or future medical care. Participants are not
obliged to answer any questions that they find objectionable or which make them feel uncomfortable. If participants withdraw, no more information will be collected from them.

When a participant indicates that he/she wishes to withdraw, the investigator will ask if the information already collected can be used. If the participant does not provide consent for the use of this information, it will be destroyed.

8. Compensation

Your child will receive a gift of about $15 in value.

9. Liability

By signing this consent form, you do not waive your legal rights nor release the investigator(s) and sponsors from their legal and professional responsibilities.

10. First Nations Elders

If you are a First Nations person, or an indigenous person who has contact with spiritual elders you may want to talk with them before you proceed with being part of this study. Elders have reservations about genetic procedures.
PARTICIPANT STATEMENT AND SIGNATURE SECTION:

I have read and understand the consent form for this study. I have had the purposes, procedures and technical language of this study explained to me. I have been given sufficient time to consider the above information and to seek advice if I chose to do so. I have had the opportunity to ask questions which have been answered to my satisfaction. I am voluntarily signing this form. I will receive a copy of this consent form for my information.

If at any time I have further questions, problems or adverse events, I can contact Dr. [Redacted].

If I have questions regarding my rights as a research participant I can contact Dr. [Redacted], Chair, [Redacted] University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board [Redacted].

By signing this consent form, I am indicating that I agree that my child participates in:

☐ Interviews and questionnaires

☐ Collection of DNA using saliva

☐ AND I agree that DNA will be stored under a code and can be used for future related studies done by the P.I.s (Dr. [Redacted]) and their team. Any new use of DNA will undergo REB review/approval first.

Signature of Participant Date

STATEMENT OF INVESTIGATOR:

I, or one of my colleagues, have carefully explained to the participant the nature of the above research study. I certify that, to the best of my knowledge, the participant understands clearly the nature of the study and demands, benefits, and risks involved to participants in this study.

Signature of Principal Investigator Date
Appendix D

Queens Research Ethics Approval for Comparison Group Study

QUEEN'S UNIVERSITY HEALTH SCIENCES & AFFILIATED TEACHING HOSPITALS RESEARCH ETHICS BOARD
September 24, 2013

Dear Dr. [Redacted],

Study Title: The impact of Mindfulness-Based Cognitive Therapy on brain function and DNA methylation in depressed adolescents
Co-Investigators:

Full Board Meeting Date: September 9, 2013

The members of the Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board have examined the protocol, budget, MRI information and safety sheet, Penn State Worry (PSWQ) questionnaire, Self-Compassion Scale (SCS-12), Junior Eyseneck Personality Short Version (JEPQ-R) revised questionnaire, The Emotion Regulation (ERQ) questionnaire, The Child and Adolescent Mindfulness Measure (CAMM), The Childhood Experience of Care and Abuse Scale (CECA), The Children’s Ruminative Style (CRSQ) questionnaire, revised Adolescent Assent Form and revised Consent Form for your project (as stated above) and consider it to be ethically acceptable. This approval is valid for one year from the date of this letter. Please attend carefully to the following list of ethics requirements you must fulfill over the course of your study:

Reporting of Amendments: If there are any changes to your study (e.g. consent, protocol, study procedures, etc.), you must submit an amendment to the Research Ethics Board for approval.

Reporting of Serious Adverse Events: Any unexpected serious adverse event occurring locally must be reported within 2 working days or earlier if required by the study sponsor. All other serious adverse events must be reported within 15 days after becoming aware of the information.

Reporting of Complaints: Any complaints made by participants or persons acting on behalf of participants must be reported to the Research Ethics Board within 7 days of becoming aware of the complaint. Note: All documents supplied to participants must have the contact information for the Research Ethics Board.

Annual Renewal: Prior to the expiration of your approval (which is one year from the date of the Chair's signature below), you will be reminded to submit your renewal form along with any new changes or amendments you wish to make to your study. If there have been no major changes to your protocol, your approval may be renewed for another year.

Yours sincerely,
Chair, Health Sciences Research Ethics Board

Study Code: PSYC-139-13Romeo #6010746

Investigators please note that if your trial is registered by the sponsor, you must take responsibility to ensure that the registration information is accurate and complete.

The membership of this Research Ethics Board complies with the membership requirements for Research Ethics Boards and operates in compliance with the Tri-Council Policy Statement; Part C Division 5 of the
Federalwide Assurance Number: #FWA00004184, #IRB00001173
Appendix E

Research Ethics Board Approval for Experimental Group Study

UNIVERSITY HEALTH SCIENCES & AFFILIATED TEACHING HOSPITALS
RESEARCH ETHICS BOARD (HSREB)

HSREB Initial Ethics Clearance

November 16, 2015

Dr. [REDACTED]
Department of Psychiatry

ROMEOTRAQ: #6016329
Department Code: PSIY-503-15
Study Title: Impacts of two dialectical behaviour therapy groups on adolescents with borderline personality disorder traits

Co-Investigators: [REDACTED]

Review Type: Delegated

Date Ethics Clearance Issued: November 16, 2015
Ethics Clearance Expiry Date: November 16, 2016

Dear Dr. [REDACTED]
The Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB) has reviewed the application and granted ethics clearance for the documents listed below. Ethics clearance is granted until the expiration date noted above.

- DERS Questionnaire
- K-SADS Questionnaire
- Childhood Trauma Questionnaire (CTQ)
- LEIDS-R Questionnaire
- Participant Consent Form (16 Years of Age and Over)
- Assent Form – Participants Under 16 Years of Age
- Parent Consent Form – Participants Under 16 Years of Age

Documents Acknowledged:

- CORE Certificate – E. Jopling
- CORE Certificate – J. Chiarella

**Amendments:** No deviations from, or changes to the protocol should be initiated without prior written clearance of an appropriate amendment from the HSREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

**Renewals:** Prior to the expiration of your ethics clearance you will be reminded to submit your renewal report through ROMEO. Any lapses in ethical clearance will be documented on the renewal form.

**Completion/Termination:** The HSREB must be notified of the completion or termination of this study through the completion of a renewal report in ROMEO.

**Reporting of Serious Adverse Events:** Any unexpected serious adverse event occurring locally must be reported within 2 working days or earlier if required by the study sponsor. All other serious adverse events must be reported within 15 days after becoming aware of the information.
**Reporting of Complaints:** Any complaints made by participants or persons acting on behalf of participants must be reported to the Research Ethics Board within 7 days of becoming aware of the complaint. **Note:** All documents supplied to participants must have the contact information for the Research Ethics Board.

Investigators please note that if your trial is registered by the sponsor, you must take responsibility to ensure that the registration information is accurate and complete.

Yours sincerely,

[Signature]

Chair, Health Sciences Research Ethics Board

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*The HSREB operates in compliance with, and is constituted in accordance with, the requirements of the TriCouncil Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the International Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Products Regulations; Part 3 of the Medical Devices Regulations, Canadian General Standards Board, and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The HSREB is qualified through the CTO REB Qualification Program and is registered with the U.S. Department of Health and Human Services (DHHS) Office for Human Research Protection (OHRP).*

**Federalwide Assurance Number:** FWA#:00004184, IRB#:00001173

*HSREB members involved in the research project do not participate in the review, discussion or decision.*
Appendix F

Beck Youth Inventory-II Description
Now assess your clients to age 18 assuring confidence in your clinical decision making, while helping you plan effective intervention. The new Beck Youth Inventories™-Second Edition for Children and Adolescents are designed for children and adolescents ages 7 through 18 years. Five self-report inventories can be used separately or in combination to assess symptoms of depression, anxiety, anger, disruptive behavior, and self-concept.

Five Inventories

The five inventories each contain 20 questions about thoughts, feelings, and behaviors associated with emotional and social impairment in youth. Children and adolescents describe how frequently the statement has been true for them during the past two weeks, including today. The instruments measure the child's or adolescent's emotional and social impairment in five specific areas:

Depression Inventory: In line with the depression criteria of the Diagnostic and Statistical Manual of Mental Health Disorders—Fourth Edition (DSM–IV), this inventory allows for early identification of symptoms of depression. It includes items related to a child's or adolescent’s negative thoughts about self, life and the future, feelings of sadness and guilt, and sleep disturbance.

Anxiety Inventory: Reflects children's and adolescents’ specific worries about school performance, the future, negative reactions of others, fears including loss of control, and physiological symptoms associated with anxiety.

Anger Inventory: Evaluates a child's or adolescent’s thoughts of being treated unfairly by others, feelings of anger and hatred.

Disruptive Behavior Inventory: Identifies thoughts and behaviors associated with conduct disorder and oppositional-defiant behavior.

Self-Concept Inventory: Taps cognitions of competence, potency, and positive self-worth.

BYI-II Bridges the gap between the Beck Depression Inventory for adults and the BYI.

BYI-II Helps You:

- Save time with brief screening tools to use by gatekeepers.
- Track students over time on the same group of integrated instruments.
- Assess adolescents with special needs and low reading level.
- Identify impaired children for referral to more extensive assessment services.
- Identify potential vulnerability to bully/victimization.
- Administer individually or in a group.
- Comply with IDEA, requiring that schools provide special services and accommodation for children with social and/or emotional impairments that interfere with their functioning in the school setting.
- Compare BYI-II Profiles of teens to BYI-II Profiles of clinical diagnostic groups.
- Examine strength of BYI-II Self Concept measure relative to symptom strength in planning interventions.
- Monitor response to interventions.
- Align your assessment with DSM-IV criteria

Appendix G

Self-Compassion Scale

To Whom it May Concern:

Please feel free to use the Self-Compassion Scale in your research. Masters and dissertation students also have my permission to use and publish the Self-Compassion Scale in their theses. The appropriate reference is listed below.

Best,
Kristin Neff, Ph. D.
Associate Professor
Educational Psychology Dept.
University of Texas at Austin
e-mail: kneff@austin.utexas.edu

Reference:

Coding Key:
Self-Kindness Items: 5, 12, 19, 23, 26
Self-Judgment Items: 1, 8, 11, 16, 21
Common Humanity Items: 3, 7, 10, 15
Isolation Items: 4, 13, 18, 25
Mindfulness Items: 9, 14, 17, 22
Over-identified Items: 2, 6, 20, 24

Subscale scores are computed by calculating the mean of subscale item responses. To compute a total self-compassion score, reverse score the negative subscale items before calculating subscale means - self-judgment, isolation, and over-identification (i.e., 1 = 5, 2 = 4, 3 = 3, 4 = 2, 5 = 1) - then compute a grand mean of all six subscale means. Researchers can choose to analyze their data either by using individual sub-scale sores or by using a total score. (This method of calculating the total score is slightly different than that used in the article referenced above, in which each subscale was added together. However, I find it is easier to interpret the total score if a mean is used.)
HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never 1 2 3 4 5 Almost always

_____ 1. I’m disapproving and judgmental about my own flaws and inadequacies.
_____ 2. When I’m feeling down I tend to obsess and fixate on everything that’s wrong.
_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
_____ 5. I try to be loving towards myself when I’m feeling emotional pain.
_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.
_____ 7. When I’m down and out, I remind myself that there are lots of other people in the world feeling like I am.
_____ 8. When times are really difficult, I tend to be tough on myself.
_____ 9. When something upsets me I try to keep my emotions in balance.
_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
_____ 11. I’m intolerant and impatient towards those aspects of my personality I don’t like.
_____ 12. When I’m going through a very hard time, I give myself the caring and tenderness I need.
_____ 13. When I’m feeling down, I tend to feel like most other people are probably happier
than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don’t like, I get down on myself.

_____ 17. When I fail at something important to me I try to keep things in perspective.

_____ 18. When I’m really struggling, I tend to feel like other people must be having an easier time of it.

_____ 19. I’m kind to myself when I’m experiencing suffering.

_____ 20. When something upsets me I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I’m experiencing suffering.

_____ 22. When I’m feeling down I try to approach my feelings with curiosity and openness.

_____ 23. I’m tolerant of my own flaws and inadequacies.

_____ 24. When something painful happens I tend to blow the incident out of proportion.

_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.
Appendix H

Building Resilience Group Therapy Feedback

Name: ___________________________ Date: ________________

1. Overall, how would you rate the group in terms of teaching you how to deal with managing your emotions? (Please circle one response)

Not helpful at all  0 1 2 3 4 5 6 7 8 9 10  Extremely helpful

2. What did you like most about the group?

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

3. What did you like least about the group?

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

4. What coping skills or knowledge might you use the next time you have difficulty managing your emotions?

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

5. What percentage of your Practice did you complete on a weekly basis? (Please circle one response)

0% 10 20 30 40 50 60 70 80 90 100%
Appendix I

DBT Informed Therapy Details

Session 1
Introductory session which included review of group rules, getting to know group members, introduction to mindfulness, breathing exercise, discussed coping box for self-soothing techniques and assigned homework. Group members were asked to create their own self-soothing kit for homework and to practice breathing exercises.

Session 2
Reviewed mindfulness and began with breathing exercise. Introduced and explained CBT model as it relates to managing emotions, discussed mindfulness in relation to physical symptoms, and provide progressive muscle relaxation instructions. Group members were asked to complete a mindfulness activity in their daily lives.

Session 3
Review of previous week. Introduced Three States of Mind, Thinking Errors, and Acting Opposite to Urges. The group member were asked to complete several activities to practice the skills requires to identify thinking errors in their daily life. Group members were encourages to use Three States of Mind during difficult times to help them engage socially acceptable behaviours. CBT single incident report records were assigned for homework in order to support these new skills.

Session 4
Reviewed CBT homework and discussed any thinking errors that group members identified over the week. Reviewed mindfulness by completing a mindful activity during session. Introduced having effective relationships and how to improve communication with others. Discussed various communications styles when interacting with others. Group members completed exercises to determine their communication style.

Session 5
Introduce and discussed distress tolerance strategies. Provided several alternative behaviours to engage in rather than engaging in habitual self-harm or self-destructive behaviour. Group members were asked to record several pleasant experiences that they had throughout the week for homework.

Session 6
Review previous week and completed a mindfulness activity through guided meditation. Discussed differences between healthy and unhealthy coping strategies. Reviewed previous material and answered questions.
Appendix J

DBT Informed Therapy with MSC Details

The manual for this group therapy was co-created by the student researcher and the agency supervisor. The manual is available upon request at the agency.

Session 1
An introductory session, which included a contract that outlined guidelines for therapy, introductions to group members, psychoeducation about emotional dysregulation, and a description of the cognitive behavioural model and how this relates to the human experience. Participants were encouraged to create a self-care kit, which included self-soothing activities.

Session 2
Involved a brief report of each participants’ week and a review of daily practices from the previous session. Therapists introduced Three States of Mind and discussed the types of cognitions involved in managing emotions. Behavioural chains were introduced to support participants in discovering their patterns of behaviour and emotional responses. Participants were asked to identify their maladaptive coping strategies and were provided with alternative behaviours to assist in managing emotions.

Session 3
Reviewed the previous week by discussing behavioural chains and homework. The therapists introduced types of cognitions that may inhibit adolescents from engaging in appropriate or acceptable behaviour. The therapists discussed emotions and how they are influenced by behaviour. Through video presentations, the therapists introduced Act the Opposite to provide opposite ways of responding to emotional urges.

Session 4
Introduced mindfulness. The session began by reviewing previous sessions and homework. The therapists then presented illusions to facilitate a group conversation about what we perceive as reality. The therapists provided a raisin eating exercise to facilitate a mindful experience. With the support from the therapists, group members reported on their perceptual experiences. The therapists explained that humans use conceptual and perceptual frames of mind to process the information about the world around them. The therapists explained that using our perceptual minds allows us to practice mindfulness, which can assist in managing emotions by identifying what they are and their intensity. Participants were encouraged to record an activity at least once a day when they were mindful. Participants were asked to report on their sensual experience and how being mindful impacted their experience.

Session 5
Introduced self-compassion and provided a guided self-compassion practice. Therapists explained the differences between self-correction and self-criticism. Participants were asked if they ever had a teacher or coach who used criticism for motivation and how this compares to someone who uses encouragement and reinforcement for improvement. The therapists then explained how individuals use self-criticism to make changes and how this reduces chances of
success and improvement. Therapists introduced self-compassion to help participants manage self-criticism or shame. The therapists explained that self-compassion involves mindfulness, the awareness that one is suffering, self-kindness, the ability to extend kindness to the self as you would a friend who is suffering, and common humanity, the understanding that all humans share the same qualities and that we are not alone in suffering. To conclude the session, therapists provided a self-compassion meditation exercise.

**Session 6**
Reserved for review of all sessions. Participants worked on setting goals with group members and applied strategies learned in sessions that could support them in the future. Therapists offered additional support for participants who required clarification. Participants completed a feedback questionnaire about the therapy for therapists to review and possibly make changes for future treatments. Individual appointments were made after this session for participants to complete BYI-II and SCS post data. After the final session, the therapists made individual appointments for participants and their parents to discuss progress in group and possibly offer additional services.
Appendix K

Differences Between Comparison and Experimental Groups

Several changes were made to the DBT informed therapy including reorganizing the delivery of mindfulness, providing more details about mindfulness, and including self-compassion practices.

Unlike the DBT informed therapy delivery, where mindfulness was taught in the introduction, mindfulness was not introduced until the fourth session. The therapists provided behavioural interventions to decrease self-harm and disruptive behaviour in the first session in order to decrease likelihood of engaging in these behaviours and increase the likelihood of treatment retention. Mindfulness also requires deliberate attention to potentially disturbing emotions, therefore, therapists decided to provide coping skills prior to teaching mindful practices. Compared to the DBT informed therapy group, mindfulness was taught in more detail and group members completed several mindful activities in session and outside of session.

Self-compassion was introduced in the second last session. The definition of self-compassion was provided to group members through multi-media presentation including videos and PowerPoint presentations. Therapists discussed the three facets of self-compassion: common humanity, the understanding that all humans share similar experiences including suffering, mindfulness, the awareness of one’s suffering, and self-kindness, the practice of extending compassion to self as you would a friend. Therapists also discussed the tendency to be self-critical rather than using self-correction which is a less harmful approach to making changes. For example, someone who uses self-criticism might say “I can’t believe I did that, I’m a horrible person” while someone who uses self-correction would say, “I’ve made a mistake, next time I will approach it this way”. Therapists also explained that the self-critical approach is punishing and results in less likely engagement in that behaviour. Therapists emphasized that self-correction results in making changes to improve a skill or behaviour. Group members were provided with a handout on the differences between self-criticism and self-correction. Finally, a self-compassion exercise was lead by the therapist. Therapist were there to offer support during this exercise as extending self-compassion can feel uncomfortable for those who do not practice this skill. The intention of this practice was to provide group members with a self-soothing coping strategy when they are having a difficult time.
Appendix L

Scores for Beck Anxiety Inventory - Youth and Beck Depression Inventory Youth - Second Edition

Scores were previously translated into t-scores using Excel software.

DBT informed therapy group.

T-scores from the Beck Anxiety Inventory – Youth Second Edition

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T-scores from the Beck Depression Inventory – Youth Second Edition

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**DBT informed therapy with MSC**

*Note. 999 indicates an incomplete score*

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**t-scores from the Beck Anxiety Inventory – Youth Second Edition**

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**t-scores from the Beck Depression Inventory – Youth Second Edition**

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**Appendix M**

Raw scores from Self-Compassion Scale

DBT informed therapy with MSC group data.

*Note. 999 indicates an incomplete score

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Appendix N

Results from the Building Resilience Feedback Survey

Question 1. Overall, how would you rate the group in terms of teaching you how to deal with managing your emotions?

Figure 1. Participants rating of therapy after the last session. Participants rated from 0 (not helpful at all) to 10 (extremely helpful).

Figure 1. Participants rating of therapy after the last session. Participants rated from 0 (not helpful at all) to 10 (extremely helpful).
Question 2. What did you like most about the group?

| 1. | that they were snacks and that everyone was understanding. |
| 2. | The self care kit idea |
| 3. | the connections I made, the openness to discuss |
| 4. | I got to miss fourth period six times |
| 5. | I liked how envolving the group is, supporting, non judgmental and nice the group was |
| 6. | The people in the group and teachers |
| 7. | The stickers and self help kit |
| 8. | I liked that I was introduced to new things to help me cope through my problems |
| 9. | Relaxation and breathing techniques. They helped me release my anxiety |
| 10. | The ability to talk and work together with a group all from different backgrounds but with the same end goal. I liked coming everyday because it kept the ideas fresh in my mind and did not interfere with other activities. |
| 11. | learning coping strategies. I enjoyed going 5 days in a row. |
| 12. | The coping stradigys. And the different mind sets. |
| 13. | Coping skills + kit |
| 14. | Learning how to anilize my emotions before I start trying to deal with them. And the self care kit. |
| 15. | I enjoyed the discussions that were aside from the lessons |
| 16. | Everyone was very kind and respectful no one judged |

All identifying information was removed.  
No spelling corrections were made.

Question 3. What did you like least about the group?

| 1. | just the timing of it. |
| 2. | no clue |
| 3. | N/A |
| 4. | when I was made to close my eyes |
| 5. | It didn’t last long enough, was only a week, didn’t talk much |
| 6. | N/A |
| 7. | How long it was |
| 8. | It didn’t go on long enough. It was okay, I think that with more time I could learn more about myself and other things that are helpful |
| 9. | I felt really uncomfortable and didn’t really connect with anyone. It was really stressful for me. |
| 10. | The limited amount of personal sharing so that we could all truly connect. |
| 11. | having to do homework |
| 12. | having to come everyday, I thought it was tiring coming everyday. |
| 13. | check ins. It was difficult with my mom’s schedule to come every day. |
| 14. | some presentations I had already seen multiple times before. |
| 15. | I found alot of the lesion were repetitive and hard to make sense of |
| 16. | nothing really |

All identifying information was removed.  
No spelling corrections were made.
Question 4. What coping skills or knowledge might you use the next time you have difficulty managing your emotions?

1. the box (self care kit) taking deep breaths
2. Self care kit
3. self care kit, journal, breathing
4. Nothing learned here
5. Breathing and self help kit
6. My self-care kit and using more reasonable mind and the wise mind
7. Breathing, hand on chest, self help
8. self-care kit
10. Definitely remembering to weigh positions as well as negatives and take a time to manage with my “wise mind”
11. I would like to use my self care kit
12. I would use the breathing.
13. breathing
14. My self care kit, my behaviour chain, self-compassion, and breathing techniques!
15. self talk, being compassionate towards myself
16. wise/reasonable/emotion

All identifying information was removed.
No spelling corrections were made.

Question 5. What percentage of your Practice did you complete on a weekly basis?

Figure 2. Participants’ reported percentage of homework completed at the end of group therapy.