A Modified Dialectical Behaviour Therapy Skills Group for Multidiagnostic Suicidal Adolescents with Symptoms of BPD

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by

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Megan Patricia Tuttle, candidate for the degree of Doctor of Philosophy in Clinical Psychology**,** has presented a thesis titled ***A Modified Dialectical Behaviour Therapy Skills Group for Multidiagnostic Suicidal Adolescents with Symptoms of BPD,*** in an oral examination held on June 13, 2011. The following committee members have found the thesis acceptable in form and content, and that the candidate demonstrated satisfactory knowledge of the subject material.

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ABSTRACT

A substantial group of adolescents demonstrate behavioural patterns consistent with the DSM-IV-TR diagnosis of borderline personality disorder (BPD). In light of the paucity of empirically validated interventions for adolescents with BPD, there is a fundamental need to develop and assess novel treatments for this underserved population. Following the research evidence for the effectiveness of standard Dialectical Behavior Therapy (DBT) for adult outpatients as well as the growing evidence for the usefulness of modified DBT programs adapted for adolescents, the primary purpose of this study was to investigate the effect of a 12-week outpatient DBT skills group that included family members and that was provided as an adjunct to non-DBT individual therapy (i.e., Treatment As Usual) for multidiagnostic suicidal adolescent outpatients. This study also offered an opportunity to examine how DBT skills group intervention might be provided in a "real-world" community-based system of care. A natural consequence of conducting this type of research is having less rigorous control over facets of the investigation. In this study, process challenges impacted the research design, and, ultimately, the opportunity to reach valid conclusions about the effects of the DBT intervention on the basis of a pre-post research design and analysis. Preliminary results suggest that a DBT skills group intervention may be a useful intervention for adolescents but additional studies are required to validate the effectiveness of DBT with this population. Implications for treatment development, service delivery, and future research directions are discussed in light of the findings.

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CHAPTER I: OVERVIEW

1.1 Chapter Overview: A Road Map

This study addresses how dialectical behavior therapy (DBT), an evidence-based treatment developed by Linehan for the effective treatment of adults with borderline personality disorder (BPD), has been adapted for the treatment of multiproblem suicidal adolescents. A review of current developments in theory, practice, and treatment outcome research in this area is provided. In order to contribute substantially to the body of knowledge on the application of DBT to suicidal/self-injurious adolescents with BPD, the primary goal of this research was to conduct a preliminary investigation of a 12-week DBT skills group that included both adolescents and their parents as an adjunctive intervention to TAU. Program evaluation measures offered an additional indicator of the perceived usefulness of group treatment.

CHAPTER II: LITERATURE REVIEW

2.1 Background and Context

Adolescent Development and Psychological Maladjustment

Contrary to popular myth, normative adolescent behaviour is not characterized by unpredictable mood swings, rebellion, or significant depression; rather, adolescence development is more often a relatively smooth process of maturation with average concerns and problems (Fall & Craig, 1998). Adolescence—the period of transition from childhood to adulthood—*can* signify the appearance and/or intensification of a range of psychiatric problems such as internalizing problems (e.g., depression, anxiety) and externalizing disorders (e.g., conduct disorder [CD]), high-

risk behaviour (e.g., suicide), as well as addictive disorders (e.g., alcohol abuse and dependence) (Steinberg, 2002). Clinical phenomena that are not typically associated with adolescence include personality disorders (PD). When psychological problems do exist, they are typically short lived and amenable to treatment (Fall & Craig, 1998).

Disorders in the Diagnostic and Statistical Manual of Mental Disorders (DSM IV-TR; American Psychiatric Association, 2000) are grouped in terms of a multiaxial system that differentiates clinical syndromes (diagnosed on Axis I) and enduring, trait-like personality phenomena (as well as mental retardation) (diagnosed on Axis II). Personality disorders are defined as enduring maladaptive patterns of thought, emotion, self-regulation, goal pursuit, behaviour, and relatedness to others that deviate markedly from cultural norms. Within the DSM IV-TR, there are three clusters of PDs that are grouped according to descriptive similarities. Borderline, histrionic, narcissistic, and antisocial personality disorders are categorized as dramatic-erratic or Cluster B disorders. These disorders are combined into a single cluster based on evidence from studies of personality disorders in adult populations (Crawford, Cohen, & Brook, 2001). The PD that has received the most empirical attention is Borderline Personality Disorder (BPD) (Bradly, Zittel Conklin, & Westen, 2005; Crick, Murray-Close, & Woods, 2005; Shiner, 2005).

Diagnostic Issues

Paediatric BPD is a controversial topic in clinical circles. Given that personality is still developing in adolescence, many professionals are hesitant to diagnose BPD in this age group (Miller, Neft, & Golombeck, 2008). Additional

reluctance may involve concerns about whether or not the diagnostic entity is constructive, particularly for teens undergoing developmental tasks such as identity formation. Historically, people with mental illness have experienced pervasive stigmatization. In some cases, this "sign of disgrace" can be more destructive than the illness itself. This may indeed be the case for BPD. Implications of this diagnosis include prejudice against individuals labelled as "borderline". The term BPD appears particularly jaundiced, with pejorative descriptors (e.g., "manipulative", "needy") and blaming of the victims by clinicians and laypersons alike (Linehan, 1993a). These terms can impede people with BPD from getting the most effective treatment from professionals and, sometimes, from getting any help at all (Dubin & Fink, 1992). Linehan (1993a) stresses how the use of such pejorative descriptors by clinicians can lead to decreased compassion for borderline individuals which, in turn, creates emotional distance from, and anger and frustration towards, their patients. It behoves clinicians to remember that we are not so different from our clients in principle—the same principles of behaviour influencing borderline behaviour are the same that influence our own behaviour—thereby making it easier to empathize and react compassionately to the challenges that these clients present to us. So, perhaps, "the less we think … in terms of diagnostic labels, the better (Yalom, 2005)."

Further concerns about paediatric BPD may stem from a perception that the DSM-IV-TR is non-developmental and, therefore, does not address childhood traits and behaviour difficulties that are continuous with adult PD (Miller, Rathus, & Linehan, 2007). With respect to the age debate, the DSM-IV-R asserts that that PD categories may be extended to children or adolescents if maladaptive personality

traits are pervasive and persistent, endure for at least one year, create significant functional impairment or subjective distress, and are unlikely to be limited to a particular developmental stage or an episode of Axis I disorder (APA, 2000). The primary features of this definition are that the BPD symptoms are severe enough to impede persistently with a teen's functioning over the duration of one year or longer. The DSM-IV definition allows the diagnosis of BPD for adolescents; however, it is ambiguous, leaving a great deal up to the judgement of clinicians (Miller, Neft, & Golombeck, 2008).

A review of the literature on the paediatric BPD construct suggests that the prevalence, reliability, and validity of BPD in adolescent samples is acceptable and equivalent to those found among adults (Miller, Rathus, & Linehan, 2007). This similarity alone may indicate that BPD functions in an equivalent manner and comparable trajectory save age and developmental period. Adolescents with patterns of behaviour that are characteristics of BPD have been shown to be fundamentally distinct from their non-borderline peers in symptomatology as well as both quantity and quality of developmental trauma (Bondurant, Breenfield, & Tse, 2004; Ludolph, Westen, Misle, Jackson, Wixom, & Wiss, 1990). Studies highlight that there is a subgroup of adolescents that is impacted severely and for which the diagnosis of BPD stays constant over time as well as a less severe subgroup that shifts in and out of the diagnosis. Thus, the rate of diagnostic stability of BPD in adolescents is similar to the adult population, and BPD retention has been predicted by a select number of symptom criteria (Miller, Neft, & Golombeck, 2008). As such, it may be worthwhile to consider using a dimensional/continuous approach to understand PDs in

adolescents instead of a categorical framework, as the former approach may better allow for the developmental variability and heterogeneity found among adolescents.

In clinical settings, such as inpatient units and outpatient clinics, ignoring BPD criteria means that many adolescents will not have the opportunity to obtain specialized treatment for their problem behaviours or, worse, obtain inappropriate treatment. These clinical errors could worsen serious dysfunctional behaviours (e.g., suicide, academic failure, delinquency, etc.) that, once rooted, are harder to treat and can have distressing long-term consequences for youth and their families (Miller, Neft, & Golombeck, 2008). However, if the impairing and dangerous aspects of BPD are addressed successfully, fewer adolescents will develop an engrained and refractory pattern of dysfunctional behaviours (Miller, Rathus, & Linehan, 2007).

Symptoms of BPD

BPD is a multifaceted mental illness characterized by core deficits and disturbances in emotional, cognitive, and behavioural functioning (Fall & Craig, 1998). Studies indicate that the symptoms, developmental precursors, distal and proximal risk factors (e.g., disrupted attachment, disturbed family context, gender, childhood sexual and physical abuse, neuropsychological deficits) of BPD are similar for adolescents and adults (Bradley, Zittel Conklin, & Westen, 2005; Crick, Murray-Close, & Woods, 2005; Miller, Rathus, & Linehan, 2007). The constellation of symptoms demonstrated in adolescence that may reflect the development of borderline personality problems include patterns of instability of affect regulation, interpersonal relationships, behaviour, self-image, marked impulsivity, as well as

suicidal and para-suicidal behaviours (APA, 2000; Appendix A for the DSM-IV-TR diagnostic criteria; Skodol, Gunderson, Pfohl, Widiger, Livesley, & Siever, 2002).

As seen with adults with BPD, adolescents have a range of problems typically initiated by *deficits in the ability to regulate and express emotions*. These youth experience difficulty managing effectively their intense and extreme emotions such as sadness, anxiety, and anger. Feeling overwhelmed by their emotions, they frequently have trouble identifying what they are feeling and thinking and they often resort to *highly impulsive and self-destructive behaviour*. "Behavioral solutions" include suicidal behaviour, non-suicidal self-injurious behaviour, substance abuse, and disordered eating (Linehan, 1993a). These behavioural solutions help youth cope with unwanted emotional distress (Miller, Neft, & Golombeck, 2008). For example, fear of abandonment by loved ones often result in suicidal behaviour that, intentionally or otherwise, prevent people from leaving and/or elicit caretaking behaviour. Abandonment issues can often be traced back to an early history of loss or parental neglect, and are played out in transferential interactions with significant others including therapists (MacFarlane, 2004). In addition to behaviour problems, these teens may have significant *cognitive impairments* including episodic, stress-related dissociative responses and/or paranoid ideation. These impairments can lead to problems attending to and concentrating on schoolwork and, ultimately, poor academic performance. With respect to relationships with others, youth with features of BPD will characteristically vacillate between feelings of idealization and devaluation as well as between avoidance of conflict and intense confrontation. This vacillation is based on the teen's emotional state in the moment as opposed to the

needs of the current situation and, consequently, *relationships with significant others are impaired*. (Miller, Neft, & Golombeck, 2008). Finally, *pervasive identity disturbances* that transcend normal identity formation are also present. These youth struggle markedly with their sense of self and often experience significant confusion with respect to their beliefs and values, and/or their sexual orientation (Linehan, 1993a; Federici, 2008).

Comorbid Axis I Disorders

For over twenty years, an association between PDs and suicidal behaviour has been highlighted. Individuals with BPD are at an increased risk for suicide, suicidal behaviour, and non-suicidal self-injurious behaviour (Links, Gould, & Ratnayake, 2003). Adolescent suicide is considered a very serious public health problem, with suicide attempts peaking between 16 and 18 years of age. In fact, the highest rates of suicide attempts across the life span occur during adolescence (Miller, Rathus, & Linehan 2007).

Not only have studies demonstrated that BPD in adolescence is associated with increased suicide and suicidal behaviour, but it is also characterized by comorbid with Axis I mental health disorders that may simultaneously demand treatment (American Psychiatric Association, 2000; Bradley, Conklin, & Westen, 2005; Miller & Glinski, 2000; Skodol, Gunderson, Pfohl, Widiger, Livesley, & Siever, 2002). For example, comorbidity between major depression and PD among adolescent inpatients and outpatients has been estimated to range from approximately 25 to 85% (Rathus & Miller, 2002).

Prevalence Estimates

PDs are highly prevalent disorders. Research conducted on the prevalence of PDs among adolescents in a community sample using adult criteria demonstrates that it is comparable to adult prevalence (Bradley, Zittel Conklin, & Westen, 2005). For example, a large epidemiological survey was conducted with 733 adolescents ranging in age from 11 to 21 years in order to estimate the prevalence of DSM-III-R PD in a community sample. Based on the most conservative criteria, the researchers estimated that approximately 17% of adolescents had at least one "severe" Axis II disorder (Bernstein, Cohen, Velez, Schwab-Stone, Siever, & Shinsato, 1993). This estimate corresponds closely with the 17.9% prevalence rate of PD observed in a non-patient sample of 797 adults (Zimmerman & Coryell, 1989).

In clinical settings, BPD appears to be the most frequent inpatient PD diagnosis (APA, 2001). Best estimates indicate that between 1%-2% of the general population, 10%-25% of inpatient admissions, and 10% of psychiatric outpatients have diagnosable BPD, and anywhere from 70-77% of them are women (Cunningham, Wolbert, and Lillie, 2004; Skodol, Gunderson, Pfohl, Widiger, Livesley, & Siever, 2002).

Clinical Ramifications of BPD

Not only are PDs prevalent, they are also linked with significant clinical ramifications. In particular, BPD is associated with substantial treatment utilization. For example, the difficulty that many BPD clients have with adaptive coping often leads to crises which, in turn, result in frequent use of high-costs resources such as the emergency room (ER), inpatient psychiatric admissions, and outpatient mental health

services (Bender et al., 2001 as cited in Health Canada, 2002; Springer & Silk, 1996). Furthermore, ongoing crisis management often results in limited time for clinicians to provide clients with training in skills to reduce the number and frequency of crises or to prevent them from initially occurring. In addition to the significant financial costs of managing high-risk clients, therapists often face emotional challenges when working with borderline clients, particularly when suicidal behaviours are prominent (Kiehn & Swales, 2001; Linehan, 1993a). For example, clinicians may experience confusion and anxiety regarding where they should start treatment, as numerous issues appear to require simultaneous attention.

In addition to the emotional challenges that arise for clinicians, there are variables unique to the adolescent population that make treatment even more complex. The previously mentioned treatment issues are coupled with significant rates of non-compliance typically found in the adolescent population. Treatment adherence has been identified as a particularly difficult issue with suicidal adolescents (Macgowan, 2004). For example, up to 50% of adolescents who attempt suicide do not receive follow-up mental health treatment. Up to 77% of those who do receive treatment, do not attend therapy appointments or fail to complete treatment.

2.2 Therapy for BPD: Dialectical Behaviour Therapy (DBT)

BPD is a disorder with few effective treatment options. According to the Treatment Guidelines posed by the American Psychiatric Association (APA; 2001), patients with BPD will profit most from a mix of pharmacotherapy and psychotherapy. Over the last two decades, DBT (Linehan, 1993a, 1993b) has emerged as an effective empirical-based intervention for treating the impairing and

dangerous aspects of BPD. It is one of two treatments that have research evidence to support its efficacy with adult BPD clients.

DBT is a cognitive-behavioural therapy (CBT) developed originally by Marsha Linehan as a manualized, outpatient treatment for chronically parasuicidal adults diagnosed with BPD. The endeavour of DBT is to "reframe" dysfunctional and dangerous behaviours as part of clients' learned problem-solving skills (Linehan, 1993a). Therapy is focused on active problem-solving and change interventions (behaviour therapy) balanced with acceptance strategies that validate clients' emotional, cognitive, and behavioural responses just as they are (Linehan, 1993a).

The DBT treatment program uses a range of cognitive and behaviour therapy techniques to address the problematic aspects of BPD. Similar to a standard cognitive-behavioural therapy program, DBT emphasises assessment, data collection, and operational definitions of targets for treatment, a collaborative therapeutic relationship, and use of cognitive and behavioural therapy strategies. Primary treatment procedures include problem solving, exposure strategies, skills training, and contingency management, all of which are supported by empirical and theoretical evidence. The focus on problem-solving addresses the impairing behaviour patterns associated with BPD as opposed to the disorder itself (Linehan, 2003a). Emotion regulation, interpersonal effectiveness, distress tolerance, core mindfulness, and self-management skills are taught to clients' in all modes of treatment.

There are numerous aspects of DBT that differentiate it from standard CBT, in particular, its emphasis on "dialectics" (Miller & Rathus, 2000). On the one hand, dialectics forms the basis of DBT as a "worldview…", "debate…establishing truths

on both sides rather than disproving one argument" (Encarta World, English Dictionary, North American Edition as cited in Miller & Dubose, 2007) or the "nature of reality" (Linehan, 1993b). On the other hand, as relationships and dialogue, dialectics is the treatment approach or strategies used by the therapist to effect change.

In addition to the notion of a dialectical worldview, DBT includes a significant emphasis on acceptance and validation strategies—accepting clients just as they are within the context of helping them learn to change (Linehan, 1993a). For example, the wish to change painful experiences is balanced with a simultaneous effort to learn to accept life's inevitable pain (Miller, Rathus, & Linehan, 2007). In this way, DBT goes one step beyond the majority of cognitive and behaviour therapies, which can be conceived as the technology of behaviour change (Linehan, 1993a).

Additional aspects that distinguish DBT from cognitive and behaviour therapy include the emphasis on a biosocial theory of BPD, specified treatment functions and modes, the notion of stage of disorder, a hierarchy of treatment targets, and viewing the therapeutic relationship as essential to treatment (Miller & Rathus, 2000). However, Linehan (1993a) herself suggests that the differences between DBT and more standard CBT strategies may not be as distinguished as she indicates and that, perhaps, the change-orientated components (e.g., skills training) may be the ones most accountable for the success of DBT.

Theoretical Framework

According to Marsha Linehan's (1993a; 1993b) biosocial theory, BPD is a

disorder of the emotion regulation system that occurs during development from the reciprocal transaction between biological vulnerability and an invalidating environment (Miller, Rathus, & Linehan, 2007). Biological vulnerability is a blend of an oversensitive and overreactive emotional response system (i.e., emotional vulnerability) and problems with modulating emotional reactions. Emotional vulnerability is characterized by high sensitivity to emotional stimuli (i.e., immediate reactions, low threshold for emotional reaction), high reactivity (i.e., extreme reactions, high arousal dysregulates cognitive processing), and a slow return to emotional baseline (i.e., long-lasting reactions, contributes to high sensitivity to next emotional stimulus). Difficulties in emotion modulation include problems with controlling or inhibiting mood-dependent dysfunctional behaviours, organizing action in the service of external goals, self-soothing physiological arousal and re-focusing attention from emotionally evocative stimuli and, experiencing emotion without withdrawing or having an intense secondary negative emotion (Linehan, 1993a; Miller, Rathus, & Linehan, 2007).

According to Linehan (1993a), individuals with BPD often respond to negative life events with a high degree of emotional arousal. These discrete periods of high affective arousal are experienced as emotionally excruciating and perceived as intolerable. During these episodes of emotion dysregulation, the individual's ability to restrain dysfunctional urges becomes impaired, as does their capacity to employ reasonable judgment, foresee future consequences of current behaviour, and circumvent behaviours that harm important relationships with others (Sunseri, 2004). Linehan views self-injurious behaviour as having emotion-regulating properties as

well as reinforcing environmental consequences. More specifically, self-harm behaviours serve to decrease affective arousal, reduce emotional pain, and help the individual to feel better (for a brief period of time). It also serves to focus attention, as well as (secondarily) draw out concern and helping behaviour in an otherwise invalidating environment. Thus, the biological mechanism underlying borderline pathology is a blend of an oversensitive and overreactive emotional response system and an inability to regulate the subsequent intense emotions and behaviour.

According to the biosocial theory, an invalidating environment is a crucial component in producing BPD, and it is particularly harmful for the child who starts life with high emotional vulnerability (Linehan, 1993a). An invalidating environment is defined as the propensity to respond inappropriately and/or in an extreme manner (i.e., over-react or under-react) to personal inner experiences, particularly beliefs/thoughts/feelings/sensations not accompanied by easily interpreted public accompaniments (Miller, Rathus, & Linehan, 2007; Robins & Chapman, 2004). In other words, public invalidation occurs in response to private experience. For example, when a child indicates that she is feeling sick, her parents might say, "No, you're not." "You don't look ill." Thus, these individuals are often at odds with their interpersonal environment because others tend to minimize the degree of their emotional discomfort and suggest that they could simply manage their own emotions with sufficient effort (Sunseri, 2004). Individuals with BPD often report a history of childhood abuse and trauma, which is a universally or prototypical invalidating experience for children (Miller, Rathus, & Linehan, 2007; Zanarini, Williams, Lewis, Reich, Vera, Marino, Levin, Yong, & Frankenburg, 1997). Implications of an

invalidating environment include a deficit in learning how to label emotions, regulate arousal, endure distress, or trust emotional responses as valid interpretations of life events.

Standard Outpatient DBT

Treatment Functions and Modes. DBT is a principle-based, comprehensive treatment based on a target hierarchy that utilizes a multimodal approach to flexibly address the compound problems of multiproblem clients. Symptoms of BPD, including the most impairing and dangerous aspects of the borderline syndrome (i.e., suicidal behaviour), are targeted in treatment. DBT also allows for the treatment of concurrent illnesses, such as depression and anxiety. In order for treatment to be comprehensive, four functions are addressed in the course of treatment; these include: (1) assisting the client develop new skills; (2) addressing motivational obstacles to skills use; (3) assisting the client with generalizing what he or she learns to their daily life; and (4) maintaining therapists' motivation and skills. Standard DBT includes concomitant weekly individual and group therapy that is conducted for one year. The four treatment functions are addressed in standard outpatient DBT via four individual modes of treatment: (1) group skills training; (2) individual psychotherapy; (3) telephone consultation (between sessions when needed); and (4) case consultation team meeting for therapists. Standard programming involves weekly concomitant individual sessions and group skills training with phone access to therapists for skills coaching.

DBT and the Therapeutic Alliance

A great importance in standard DBT is placed on the therapeutic relationship

as essential to treatment. Linehan (1993b) emphasises that "the whole of [DBT] treatment emphasizes building and maintaining a positive, interpersonal, collaborative relationship between client and therapist[s]" (p. 5). Based on her work with suicidal individuals, she stresses that this relationship is, at times, "the only thing that keeps them alive" (Linehan, 1993a, p. 21). Linehan observes that although cognitive and behaviour therapists have both noted the importance of this collaborative relationship, they have not historically given it the prominence that she gives it in DBT.

In adult psychotherapy, the patient-therapist relationship has garnered significant attention. Evidence shows that the therapeutic alliance has demonstrated robust predictive validity for outcomes such as treatment completion, compliance with treatment demands, and therapeutic change across a range of orientations, treatment, modalities, and client populations (Castonguay, 2002). According to Linehan, the therapeutic relationship in DBT has a dual function—"it is both the vehicle through which the therapist is to develop a therapeutic relationship quickly and it is also the therapy" (Linehan, 1993, p. 514). A strong therapeutic relationship is considered to be the most crucial element in providing effective therapy with suicidal and clients with BPD. The client and/or the therapist are unlikely to stay in therapy without this relationship (Miller & Rathus, 2000).

Historically, there has been a paucity of empirical attention paid to the therapeutic relationship in child and adolescent therapy research. During the past decade, however, efforts have been made to examine this area. Shirk and Karver (2003) conducted a meta-analysis of 23 studies of child and adolescent therapy. They found a modest relationship between outcome and therapeutic change, which was

evident across different types of child problems (e.g., externalizing and internalizing) and treatment (e.g., behavioural, non-behavioural, manualized, non-manualized). Research on the therapeutic alliance in child therapy tends to focus on the child and therapist relationship; however, given that the parent is often included as part of the treatment in child therapy, the parent-therapist relationship is an important component. There are, however, only a small number of studies that explore this issue. Variables associated with a better parent-therapist relationship include treatment completion, compliance with therapy, satisfaction, as well as child therapeutic change. There is a need to recognize and evaluate factors in the alliance-outcome relation such as the underpinnings and characteristics of alliance (Kazdin & Whitley, 2006) and, more specifically, the adolescent, parent, therapist relationship that may have an effect on DBT treatment outcomes (Castonguay, 2002).

2.3 Is the DBT Treatment Effective? Data Supporting its Efficacy

DBT is the most researched and disseminated form of psychotherapy for BPD (Lynch, Trost, Salsman, & Linehan, 2007). An extensive body of outcome literature on standard DBT has amassed over the last 20 years. In an initial effort to assess the effectiveness of standard outpatient DBT, Linehan and colleagues (1991) conducted a Randomized Clinical Trial (RCT) comparing DBT (n = 24) to community based treatment as usual (TAU) (n = 23). Patients assigned to the DBT condition demonstrated statistically significant reductions in parasuicide behaviour, a reduced number of inpatient days per person (8.5 days vs. 38.6 days per year), and a lower percentage of treatment dropouts (83% vs. 42%). Although DBT was a more intensive form of treatment than TAU, it was found to be less expensive in health care

costs per patient because of the decrease in the number of medical inpatient days ($360 for DBT vs. $1.094 for TAU) and ER visits ($226 for DBT vs. $569 for TAU). At treatment termination, DBT patients were rated by an interviewer as higher on global adjustment compared to participants in the TAU and rated themselves higher on a general role inventory performance. These findings were indicative that DBT was effective at reducing life interfering behaviours.

In a second analysis, Linehan (1994) found that participants in the DBT condition reported better social adjustment and significantly less anger. The gains of DBT were maintained generally at both 6-month and 12-month follow-up periods. The second study strengthened the results from the first study, namely that standard DBT is more effective than general TAU.

Linehan (1993a) highlights several critical issues when considering the foundation of research for DBT's effectiveness. Specifically, the data does not support the notion that one year of treatment was enough for these clients because, even though there were significant improvements over a one year period that were maintained at one-year follow-up, they continued to score in the clinical range on almost all of the assessment measures. In addition, Linehan stresses the need for more research to replicate these outcomes and to demonstrate that other interventions are not effective in a controlled clinical trial.

Since DBT was evaluated initially in a clinical trial (Linehan et al., 1991), evidence regarding the efficacy of standard outpatient DBT has not only been replicated in several trials, but has also continued to demonstrate positive results such as increased client retention, overall social adjustment, general level of functioning

and employment performance, as well as being associated with decreased levels of parasuicidal behaviour, psychiatric hospitalisations, anger, and psychotropic medication usage (Katz, Gunaskeara, Cox, & Miller, 2000; Katz, Gunaskeara, & Miller, 2002; Koerner and Linehan, 2001; Miller, Rathus, & Leigh, 1996; Scheel, 2000; Sunseri, 2004).

Applications and Modifications of Standard DBT

More recently, DBT has been applied to diverse forms of psychopathology, various settings, and different populations across the lifespan. DBT has been applied to mental health problems (particularly those in which dysfunctional behaviours serve to modulate emotion) such as eating disorders (Palmer et al., 2003; Robins & Chapman, 2004; Safer et al., 2001; Telch et al., 2001), substance abuse problems (Linehan et al., 1999; van den Bosch et al., 2002), and antisocial PD (Correctional Service of Canada, 2002; Rizvi and Linehan, 2001). DBT has been used in diverse settings, such as non-outpatient units (Alper & Peterson, 2001; Barley et al., 1993; Bohus et al, 2000), residential programs (Wolpow, 2000), as well as community agencies (Robins & Chapman, 2004). DBT has been applied to populations such as elderly patients (Lynch, et al., 2003), couples (Fruzzetti and Fruzzetti, 2003; Hoffman et al., 1999; Miller et al., 2002; Woodberry et al., 2002), and inmates in correctional settings (McCann, Ball, & Ivanoff, 2000). Research data demonstrates that standard DBT interventions are generalisable across settings and populations.

Issues of Cost-Effectiveness and Practicality: Support for Modified DBT Programs

Important cost-effective and practical issues arise when service providers consider employing the standard model of DBT, which is a labour intensive and costly treatment (Stanley, Brodsky, Nelson, & Dulit, 2007). It may be unrealistic to be able to successfully implement this therapy model in publicly funded mental health organizations because of issues related to administrative support, a lack of financial support, limited staff resources, problems getting staff members to buy into DBT, and costly training (Miller, Rathus, & Linehan, 2007). For these reasons, there is an identified need in the literature to develop and assess a shorter model that could capitalize on resources and provide cost savings while yielding faster overall skills acquisition (Stanley, Brodsky, Nelson, & Dulit, 2007). Although Linehan (1993a) asserts that non-adherence to the standard DBT program poses a risk for decreased treatment effectiveness, other researchers have found positive treatment outcomes with adaptive versions of DBT programs and/or partial implementation of DBT protocols (Guile, Greenfield, Breton, Cohen, & Labelle, 2005; Koerner, Dimeff, & Swenson, 2007; Shearin & Linehan, 1994).

Researchers have found that the skills training group/skills coaching component of DBT plays a crucial role in treating aspects of the disorder itself (Koerner & Linehan, 2000). Blum and colleagues (2002) developed an adapted DBT outpatient treatment program based on the DBT skills training mode of treatment. They found that clients demonstrated improvement in BPD and mood-related symptoms as a result of participating in the program and, that both clients and

therapists indicated moderate to high levels of satisfaction with the program. Other researchers have also found that using a modified DBT approach using skills training and treatment as usual (TAU) was successful for treating behaviours that are part of the borderline syndrome in outpatient settings (Barley et al., 1993). Despite promising preliminary evidence, there is a need for further investigation to determine the efficacy of DBT-based brief treatment models.

What Do We Know about Effective Treatments for Adolescents?

Data indicates that youth suicide is a significant public health concern; however, comparably little research has been conducted on how to treat such impairing and dangerous aspects of BPD (Macgowan, 2004; Rathus & Miller, 2002). Based on a review of intervention research on youth suicide, only a modest number of experimental treatment studies were identified in the literature (Cotgrove et al., 1995; Harrington et al, 1998; Wood et al., 2001; and Huey et al., 2004).

Harrington and colleagues (Harrington et al., 1998, Kerfoot, Harrington, & Dyer, 1995) conducted a rigorous investigation that randomly assigned adolescents age 16 and older who had deliberately poisoned themselves to either a brief manualized family communication and problem solving home-based intervention (n = 85) (Harrington et al., 2000) or TAU (n = 77). Based on indirect outcome markers of suicidality, the researchers found significantly lower suicidal ideation scores of non depressed youth (versus those of the depressed youth) in the family intervention versus the control group at 2- and 6-month post tests; however, this intervention did not reduce significantly self-injurious behaviours in either groups. Thus, researchers

suggested that the brief five-session family therapy alone may not be adequate as a stand-alone intervention.

Group work has been recommended to decrease suicidality in youth (Aronson & Scheidlinger, 1995; Rittner & Smyth, 1999; Ross & Motto, 1984), but few researchers have evaluated its efficacy with this population. In a randomized clinical trial, Wood and colleagues (2001) compared a "developmental group psychotherapy" (involving elements of problem solving, CBT, DBT, and psychodynamic therapy) and TAU (n = 32) to TAU (n = 31). At the 7-month follow-up, researchers found improvements in both direct (e.g., self-poisoning, self-cutting) and indirect (e.g., depression, suicide ideation, school attendance, behavioural problems) treatment outcome markers of suicidality for youth who received group therapy. Also, the experimental group members were less likely to be "repeaters" of self-harm behaviour versus adolescents who received TAU alone. Researchers did not find reductions in depression, suicidal thinking, or global outcome, a finding that is consistent with other research (Linehan, 1991).

In order to determine whether a family-, school-, and community-based therapy model was an effective intervention for adolescents presenting with acute mental health problems, Huey and colleagues (2004) randomly assigned 156 male and female participants ranging from 10 to 17 years of age to either a "multisystemic therapy" (MST; Henggeler, Schoenwald, Rowland, & Cunningham, 2002) condition or an inpatient psychiatric hospitalization condition. Group differences were examined at pre- and post-treatment as well as at one-year follow-up. Researchers found that MST was more effective at decreasing the frequency of attempted suicide

as compared to inpatient psychiatric hospitalization; however, it was not more effective at reducing suicidal ideation, hopelessness, and depressive affect. Several methodological issues were noted to have limited the study's findings and, therefore, the ability to reach valid conclusions.

As a result of the treatment gains found with adult clients, standard DBT has been adapted for use with suicidal adolescent clients with multiproblems, Axis I and II diagnostic co-morbidity, and other forms of extreme behavioural dyscontrol. Miller and colleagues (1997) developed an intervention for suicidal adolescents called DBT for Adolescents (DBT-A). Modifications to the program included shortening the length from one year to 12 weeks as well as including parents in both the skills-training group and individual therapy sessions. Results included reduction in hospitalizations, increased retention rate, as well as significant reductions in suicidal ideation and Axis-I and Axis-II symptoms (Rathus & Miller, 1999).

Rathus and Miller (2002) conducted a nonrandomized controlled quasi-experimental pilot study of a modified DBT program. Mostly female adolescents (93%) were assigned to an outpatient DBT condition (n = 29) that included family members in the skills training group. A total of 82 youth were assigned to the TAU comparison condition, which consisted of 12 weeks of twice-weekly, supportive-psychodynamic individual therapy and weekly family therapy. Results showed that adolescents who were treated with DBT were significantly more likely to complete treatment (62% vs. 40%) and had significantly fewer psychiatric hospitalizations (0% vs. 13%). No significant differences in parasuicidal behaviour were found between groups. Given that the DBT condition was reported to be initially more suicidal than

the comparison group, there is some evidence to suggest that a treatment effect may have been present. Significant reductions were found among the DBT youth from pretest to posttest in suicidal ideation, general psychiatric symptoms, and symptoms of BPD. In the end, Rathus and Miller suggested that DBT was a hopeful treatment model for suicidal youth with BPD.

Katz and colleagues (2004) conducted a study of a two-week DBT program for suicidal adolescent inpatients (n = 26) compared to a control group (n = 27). Significant reductions in depressive symptoms, suicidal ideation, and parasuicidal behaviours were revealed at discharge and at one-year follow-up. Inpatients in the DBT condition also showed a lower rate of self- or hetero-aggression during treatment. No differences were found between groups on symptom reductions, treatment attendance, re-admission rates, or emergency room visits.

There have been additional studies conducted on DBT with adolescents. For example, Sunseri (2004) observed a reduced length of hospitalization for suicidal adolescents girls following a DBT model. Nelson-Grey (2006) found that a modified DBT-based group therapy was effective in reducing negative behaviour and increasing positive behaviour for teens with Oppositional Defiant Disorder (ODD). In a study comparing the effectiveness of DBT versus Standard Therapeutic Milieu (STM) in a residential treatment program with a cohort of adolescents with mixed diagnoses, the DBT condition was found to be statistically and clinically more effective in improving symptoms of depression following 17 weeks of DBT skills training group therapy (Wasser, Tyler, McIlhaney, Taplin and Henderson, 2008).

Findings from controlled research studies taken as a whole suggest that

outpatient psychosocial interventions that directly address suicidal behaviour as well as comorbid disorders are effective in reducing future risk of suicidal behaviours. DBT is the single treatment thus far that has more than one clinical trial showing its effectiveness in decreasing suicidal attempts and parasuicidal behaviour among adolescents (Miller, Rathus, & Linehan, 2007). Preliminary data from pilot DBT-based studies targeting this vulnerable population have demonstrated encouraging albeit inconsistent results. Findings have been limited by methodological issues such as a lack of randomization and other controls including manualized treatments, fidelity measures, and intent-to-treat analyses, as well as the restriction of analyses to posttest comparisons. Although researchers have concluded that DBT is a fitting model and a promising intervention for suicidal youth with BPD, there is a need for further investigation of DBT to strengthen the current empirical basis regarding the feasibility and effectiveness of this treatment (Hjalmarsson, Kaver, Perseius, Cederberg, & Ghaderi, 2008; James, Taylor, Winmill, & Alfoadari, 2008), as well as adapted DBT programs to determine the particular components and/or processes that contribute to positive outcomes (Castonguay, 2002; Grohens, 2004).

In summary, adolescence can signify the appearance of serious psychiatric disorders. The high prevalence of BPD in clinical settings combined with frequent self-injurious acts, a high risk of suicide, and corresponding medical and psychiatric costs justify the need for additional research on useful interventions for BPD. Over the last 20 years, DBT has emerged as an effective treatment for BPD. More recently, it has been modified for adolescent populations in both outpatient and inpatient settings. Preliminary results from treatment studies based on Miller's adaptation of

Linehan's model for adolescents demonstrate reductions in Axis I and II symptomatology as well as fewer psychiatric hospitalizations. Findings are promising yet by no means consistent. More applied and clinical studies on the feasibility and effectiveness of modified-DBT treatment protocol with adolescents are required to strengthen the empirical basis for effectiveness with this population.

2.4 Significance of the Study

The rationale for evaluating the effectiveness of a DBT skills training group plus TAU for adolescents and their parents is based on the following factors:

1. There is a great demand for specialized interventions for multidiagnostic suicidal/self-injurious adolescents who present with symptoms consistent with BPD that also addresses the prominence of the family system. Given the relative paucity of efficacious treatment approaches for this population, testing novel therapy models is of fundamental importance and timeliness.

2. Considerable resources are required to implement standard DBT including administrative support, financial support, costly training, staff resources, and a one-year commitment from clients. Service providers do not always have access to resources to implement the comprehensive DBT program, and clients as well as clinicians cannot always commit to this lengthy treatment period. There is an identified need in the literature to adapt less costly and less intensive DBT-based programming that can be more readily used and widely distributed. Particular modes of DBT intervention (e.g., the group-skills training component) could be a valuable supplement to TAU.

3. In spite of the usefulness of DBT skills training and the increasing

empirical support for the effectiveness of DBT for adolescents, research examining the efficacy of this intervention for suicidal/self-harming adolescents is limited. Studies are required to determine whether or not participation in DBT-based programming (i.e., Skills Training Group plus T.A.U.) is associated with improvements of the behaviours/symptoms that are part of the primary features of BPD.

4. Applied clinical research is not conducted within the context of a sterile, controlled laboratory setting with clients as research "subjects". Unanticipated events, situations, and people (e.g., therapists, clients, administrative staff) can undermine even the best-conceptualized study making it challenging to foresee how research will actually occur in clinical practice (Kazdin, 2001). To establish the effectiveness of DBT as it is practiced in "real-world" settings (Harley, Baity, Blais, & Jacobo, 2007; Woodberry & Popenoe, 2008), the need for naturalistic research is of paramount importance.

5. There is a need to use outcome measures other than adolescent self-report in DBT-treatment research (Rathus & Miller, 1999; Woodberry & Popenoe, 2008). This endeavour is valuable because adolescents may tend to report greater changes than their parents (Weisz, McCarty, & Valeri, 2006).

2.5 The Current Study

2.5.1 Study Objective

Our primary goal was to contribute substantially to the body of knowledge on the application of DBT to suicidal/self-injurious adolescents with BPD. More specifically, our purpose was to conduct a preliminary investigation of a 12-week

DBT skills group that included both adolescents and their parents as an adjunctive intervention to TAU.

2.5.2 Study Hypotheses

The primary hypothesis was as follows:

1. Adolescents who receive 12-weeks of DBT group treatment will demonstrate significant reductions in the severity of thoughts, feelings, and behaviours that are characteristic of BPD at post treatment and at 3-months follow-up compared to pre-treatment.

The secondary hypotheses were as follows:

1. Adolescents who receive 12-weeks of DBT group treatment will demonstrate significant reductions in suicidal behaviours, depression, and anxiety at post treatment and at 3-months follow-up compared to pre-treatment. Parents will report significant reductions in impaired family functioning and, further, will provide collateral information on changes in affective instability.
2. Participants who receive 12-weeks of DBT group treatment will rate highly their perception of the therapeutic alliance and positive treatment outcomes will be associated with the quality of the therapeutic alliance that was formed during the group treatment.
3. Participants, their parents, and TAU clinicians will rate positively the DBT group treatment, report high levels of satisfaction with services at post-treatment, and consider DBT group treatment as a valuable service that complements TAU.

CHAPTER III: METHOD

The University of Regina Research Ethics Board and the Regina Qu'Appelle Health Region (RQHR) Research Ethics Board provided ethical approval for this study (Appendix B). Assent was obtained from adolescents. Consent was received from parents (Appendix C).

3.1 Research Design and Rationale

This study utilized a within-subjects repeated measures design (i.e., pre/post and follow-up design). In order to methodically assess change over time and to establish whether or not any observed changes were maintained following completion of the group treatment, outcomes were measured at baseline (week 1), mid-treatment (week 6), post-treatment (week 12), and at 3-month follow-up. Quantitative and descriptive procedures were used. The design and procedures used consistent with DBT studies conducted with adolescents in outpatient settings (e.g., Hjalmarsson, Kaver, Perseius, Cederberg, & Ghaderi, 2008; James, Taylor, Winmill & Alfoadari, 2008; Woodberry & Popenoe, 2008).

3.2 Author's Role

My role as principal investigator in the current study involved the following: (1) treatment development and implementation, (2) planning of study methodology and study design, (3) obtaining permission from the service provider to conduct the study, (4) informing DBT clinicians about study criteria and objectives, (5) assessment of eligibility, (6) delivery of the intervention, (7) training psychology student on data entry, (8) data analysis and, (9) consultation with statisticians/committee members regarding analytic plan. With respect to data

collection, colleagues of the principal investigator administered/collected outcome measures from group members. Supervision was provided at each stage of the project. The Canadian Code of Ethics for Psychologists (CPA, 2000) was consulted re: guiding principals (e.g., Respect for the Dignity of Persons, Integrity in Relationships, etc.) that were relevant to the ethical dilemma that emerged as a result of involvement in multiple relationships. (Refer to Discussion Section for more detailed discussion regarding ethical issues.)

3.3 Eligibility

Criteria for study eligibility were established in an attempt to maximize external generalizability, and they adhered closely to Linehan's (1991) and Rathus and Miller's (2002) inclusion and exclusion criteria. Participants were required to (1) endorse at least three (of nine) prominent borderline features, (2) be between the ages of 13-18 years, (3) be fluent in English, (4) have recurrent suicidal ideation/attitudes/behaviour, self-injurious behaviour, and/or past suicide attempts. The following exclusion criteria were used (1) cognitive impairment, severe learning disability, severe receptive or expressive language disorder, or mental retardation, (2) a diagnosis of schizophrenia, other psychotic disorder, or unmanaged Bipolar I disorder, (3) active substance abuse necessitating treatment, (4) a history of exhibiting overtly hostile, aggressive, or threatening behaviours towards other clients or staff in a treatment setting.

3.4 Recruitment

Participants were recruited between February 2007 and February 2010 from Regina Child and Youth Mental Health Services. Referrals were made on a "first

come, first served" basis, and came from social workers (40.9%), psychologists (54.5%), and psychiatrists (4.5%). (See Appendix D.) Over the three-year recruitment period, a total of 56 adolescents were referred to the study. Individuals were required to complete an intake interview to determine eligibility. At that time, facilitators described the screening process, introduced the study, and gathered baseline data, screened for inclusion and exclusion criteria. Of the 56 referrals, 31 adolescents were excluded from the study (e.g., acute drug/alcohol problems), refusal of services, no-show, inaccurate contact information, and scheduling conflicts. 25 adolescents were enrolled in the study. Of these, three did not begin treatment because of ongoing crises, employment, and unknown reasons.

3.5 Treatment Retention.

See Figure 1 for consort diagram. Overall, 22 adolescents received 12 weeks of the DBT treatment group. Of the 22 adolescents, 11 adolescents (50%) were classified as treatment completers. In the current study, there were significant problems with retaining participants. Reasons for treatment withdrawal included an unexpected move to another province, transportation difficulties, employment, and interpersonal conflict with group members. Attrition has been associated with a wide range of negative outcomes for not only clinicians (e.g., reduced staff productivity and cost-effectiveness) and researchers (e.g., sampling bias, reduced statistical power, limited generality of results) but, most importantly, for families themselves (e.g., poor therapeutic outcomes) (Nock & Kazdin, 2005).

Attrition results in a threat to internal validity. For example, any changes in the group functioning may be attributed to the loss of participants who scored in a

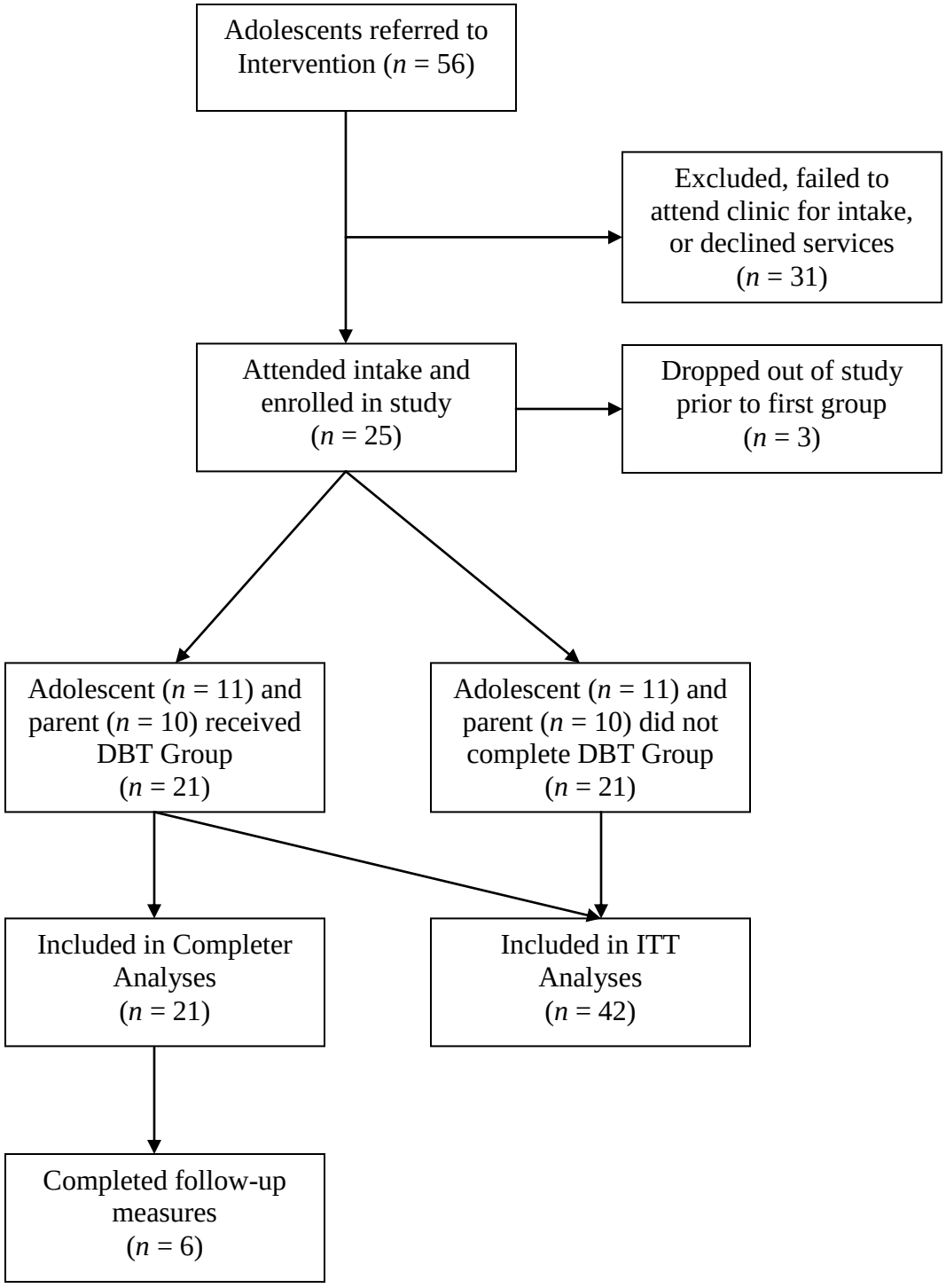

Figure 1. Participant Flowchart following Consort Guidelines for Reporting Trials Guidelines.

particular direction on assessment measures as opposed to the impact of the intervention. That is to say, the mean of dropouts may be different than the mean of the rest of the sample, so that any changes in the mean may result from the loss of a select group of participants (Kazdin, 2003). In conclusion, the high rate of attrition in this study had implications regarding our ability to draw valid inferences about the findings. As such, it behoves researchers/clinicians to adopt more effective strategies to address high rates of attrition.

3.6 Treatment Completion Analyses

To assess whether or not there were any significant differences between those who completed the intervention and those who did not, analyses were conducted comparing these two groups. These analyses could provide important information regarding differential treatment response by client subtypes (e.g., age, family involvement, symptom levels, etc.).

Evaluation of baseline characteristics between the two groups revealed that, although not statistically significant, the mean age of adolescent treatment completers (M = 16.90, SD = 1.13) was higher than the mean age for treatment non-completers (M = 15.72, SD = 1.55; $t = 2.03$, p = .05). Research cited in the DSM-IV-TR (APA, 2000a) highlights an association between increasing age and a reduction in severity of symptoms, thereby making older individuals more amendable to treatment. This data suggests a potential need to re-think the adolescent age limit for inclusion in the DBT skills training group in order to potentially increase retention rates.

Chi-square analysis using Fisher's Exact Test revealed no statistically significant differences between the two groups on previous hospitalization for

psychiatric reasons (50% vs. 50%; $X^2 = 0.13$; $p = .08$). On the Millon Adolescent Clinical Inventory (MACI; Millon & Davis, 1993), treatment completers reported significantly lower baseline scores on the depressive affect (85.50 vs. 103.83, $t = -2.67$, p = .01) and suicidal tendency (53.70 vs. 94.50, $t = -2.94$, p = .01) scales of as well as a trend towards lower baseline scores on the eating dysfunction scale (49.80 vs. 77.83, $t = -2.31$, p = .04). An additional difference between these two groups was that youth who did not complete treatment experienced greater negative thoughts and feelings related to BPD at baseline. Certainly, experiencing more acute levels of distressed thinking and feeling prior to entry into a treatment group could account for the reason these adolescents were less likely to complete treatment. No statistically significant differences were found between the two groups on BPD criteria as measured on the Structured Clinical Interview for DSM-IV Axis II PDs (SCID-II) (First, Gibbon, Spitzer, Williams, and Benjamin, 1997) (treatment non- completers, M = 7.00, SD = 0.94; treatment completers, M = 6.09, SD = 1.61; t = -1.614; $p > .05$). There were no statistically significant differences between the two groups on the BSS ($t = -1.957$, p >.05), CDI ($t = .45$, p >.05), and MASC ($t = .521$, p >.05).

3.7 Measures

A battery of psychometrically sound and empirically supported measures based on past research on analogous programmes was used to maximize the validity of the evaluation process (Meyer, Finn, Eyde, Kay, Moreland, & Dies, 2001). Primary and secondary outcomes were assessed with an extensive assortment of paper-and-pencil self-report instruments.

2.7.1 Eligibility Assessment

The following instruments were utilized during the screening process to determine eligibility criteria (i.e., BPD personality traits). They were *not* used to determine change in personality traits as a function of the 12-week intervention.. The BPD module of the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) was used to collect information on the presence or absence of BPD symptoms. The SCID-II is a semi-structured interview that is used widely in clinical and research contexts as part of a standard diagnostic assessment, to describe personality profiles in specific samples, and to select patient groups. A range in reliability has been found for the SCID-II, which is based on research methodology and the nature of the sample; however, previous studies with the DSM III-R version of the SCID have shown reliabilities by diagnosis over .60 (First, Spitzer, Gibbon, & Williams, 1997a).

The Millon Adolescent Clinical Inventory (MACI, Millon & Davis, 1993) was used to collect information on clinical syndromes (e.g., depressive affect, anxious feelings). The MACI is a 160-item, 31-scale inventory that uses a true-false format in order to assess DSM-IV Axis I and Axis II diagnoses unique to an adolescent population. The 31 Scales are divided into four areas: One Validity Scale and three Modifying Indices; 12 Personality Patterns; eight Expressed Concerns; seven Clinical Syndromes. Studies demonstrate excellent reliability properties. The homogeneous scales have a high degree of precision in measurement and demonstrated adequate validity to support its use in clinical contexts. The scales have good stability and relate meaningfully to external variables and criteria, including other self-report

measures and clinician judgement (McCann, 1999; Millon, 1993; Strack, 2002).

2.7.2 Assessment of Primary Treatment Outcomes

The primary outcome variable was severity of thoughts, feelings, and behaviours that are characteristic of BPD.

BPD Symptom Severity. The Borderline Evaluation of Severity over Time (BEST; Blum, Pfohl, St. John, Monahan, & Black, 2001) provides information on the degree of impairment caused by each of nine BPD criteria over the past week. Scores are generated across three subscales (e.g., negative thoughts and feelings, negative behaviours, as well as positive coping behaviours) and can range from 12-72. Higher scores indicate greater impairment and/or frequency of thoughts, feelings, and behaviours that are characteristic of BPD. Research indicates that the BEST is an acceptable psychometric tool with good internal consistency, moderate convergent and discriminant validity as well as sensitivity to clinical change, therefore demonstrating score validity (Blum, Pfohl, John, Monahan, & Black, 2002). Moderate to strong correlations with other measures of symptom severity (e.g., Beck Depression Inventory) have been found. Good internal consistency and moderate median item-total correlations have also been found.

3.7.3 Assessment of Secondary Outcomes

Secondary outcomes included suicidal attitudes and behaviour, depression, anxiety, and family functioning. All outcomes were assessed with paper-and-pencil self-report instruments.

Suicidal Attitudes and Behaviours. The Beck Scale for Suicidal Ideation (BSS; Beck, Kovacs, & Weissman, 1979) is a 19-item measure that assesses the

intensity of an individual's suicidal thoughts, plans, and behaviours. Items are rated on a 3-point scale ranging from 0 to 2, and reflect least to greatest level of ideation. Scores range from 0 to 38. Good inter-rater and internal consistency reliability, as well as validity have been established (Beck, Kovacs, & Weissman, 1979; Beck, Steer, & Brown, 1993). Although the SSI was developed for use with adults, it has demonstrated reliable and valid use with adolescents (DeMan & Leduc, 1994).

Depression. The Children's Depression Inventory (CDI; Kovacs, 1992) has been used as a measure of depressive symptoms in children and adolescents aged 7 to 17 years. Respondents are required to respond to 27 items related to negative mood, interpersonal problems, ineffectiveness, anhedonia, and negative self-esteem. Items are rated on a 3-point scale (ratings of 0 = absence of symptom; 1 = mild symptom; and 2 = definite symptom). Scores can range from 0-54 with higher scores indicating greater severity of depressive symptoms. The CDI has good internal consistency and has acceptable test-retest reliability (Bradley, Zittel Conklin, & Westen, 2005). It has acceptable concurrent validity. The scale also demonstrates an adequate ability to distinguish between clinical and non-clinical groups of children, as well as discriminate youth with major depressive or dysthymic disorder (Bradley, Zittel Conklin, & Westen, 2005).

Anxiety. The Multidimensional Anxiety Scale for Children (MASC; March, 1997) is a 39-item measure used to evaluate the presence and severity of a variety commonly experienced anxiety symptoms among children and adolescents including physical symptoms, harm avoidance, social anxiety, and separation/panic. It measures the level of total anxiety, and has two major indexes (anxiety disorder and

inconsistency). Higher scores indicate more acute and distressing symptoms of anxiety. The MASC has demonstrated excellent test-retest reliability (March, Conners, Arnold, Epstein, Parker, Hinshaw, Abikoff, Molina, Wells, Newcorn, Schuck, Pelham, & Hoza, 1999).

Affective Instability. Parents provided collateral information on depression and anxiety. The Child Behavior Checklist (CBCL; Achenback and McConaughy, 1987) is a questionnaire used to evaluate symptoms of depression and anxiety in children and adolescents ages 6 through 18. Items are rated on a 3-point scale (0 = not true, 1 = somewhat or sometimes true, 2 = very true or very often). Research has shown that it is a reliable and valid measure. It is widely used in research and clinical settings because of strong psychometric properties and ease of administration (Achenbach & McConaughy, 1987; Achenbach, 1993; Lachar, 2003).

Family Functioning. The Family Assessment Measure, Third Edition (FAM-III; Skinner, Steinhauer, & Santa-Barbara, 1984) assesses a range of family functioning including task accomplishment, role performance, communication, affective expression, involvement, control, values and norms. It is used in clinical and research contexts as a measure of therapy progress and outcome as well as for research on family processes (Steinhauer, 1984).

3.7.4 Evaluation of the DBT Skills Training Group Program

Satisfaction with Services. The Client Satisfaction Questionnaire (CSQ-8; Larsen, Attkisson, Hargreaves, & Nguyen, 1979) is a brief, eight-item self-report questionnaire that evaluates client satisfaction with a range of aspects of care including quality, type, and extent of services that are provided. It provides a

continuous score regarding general satisfaction (Appendix E). The APA (2000) indicates that it is a reliable and valid indicator of client satisfaction with services. It is designed for use in mental health and general health care settings.

Group Ratings. Open-ended questions were used to elicit adolescent, family, and clinician perceptions of the DBT skills training group. Questions included: How did you benefit? What did you find most helpful? What did you find least helpful? What do you think could be improved? What behavioural changes have you made?

Working Alliance Inventory. The WAI (Horvath & Greenberg, 1989) was intended to produce the following three alliance scales: (1) Goals, (2) Tasks, and (3) Bonds. Researchers investigating the therapeutic alliance have utilized these scales in their research (Andrusyna, Tang, DeRubeis, & Luborsky, 2001). In the current study, the short versions of the therapist and client forms (Tracey & Kokotovic, 1989) were used to assess the process-related variables involved in the group treatment. The scale has12 items and is rated on a seven-point Likert type scale.

3.8 DBT Group Intervention

Treatment setting and group facilitators

Treatment was delivered at Regina Child and Youth Mental Health Services. A total of five groups were run between February 2007 and April 2010. Two DBT-trained therapists facilitated each group. Training included, for example, attendance at a two-day workshop in San Francisco, CA. on DBT with Multi-Problem Adolescents presented by Alec Miller, Psy.D and Anthony DuBose, Psy.D. A total of three experienced clinicians delivered the treatment. Of this group, one held a mental health therapist designation with over twenty five years of experience, one held a degree in

social work, and one held a master's degree in psychology.

Treatment Intervention

The DBT skills training group was developed according to DBT principles that have been established in the literature as effective, specifically DBT skills + TAU (Harley, Baity, Blais, & Jacobo, 2007). The skills training group provides the main forum for acquiring and strengthening skills that target problem behaviours associated with BPD (Miller, Rathus, & Linehan, 2007). DBT skills correspond directly to Linehan's conceptualization of the DSM-IV BPD symptoms (Linehan, 1993a). According to this reorganization, the DSM-IV criteria fall into areas of dysregulation across several domains (Miller, Neft, & Golombeck, 2008). The areas of dysfunction and the corresponding skills modules are as follows:

Problem Areas	Skills Modules
1. Self Dysregulation	Core Mindfulness Skills
2. Interpersonal Dysregulation	Interpersonal Effectiveness Skills
3. Behavioural/Cognitive Dysregulation	Distress Tolerance Skills
4. Emotional Dysregulation	Emotion Regulation Skills

It is theorized that when clients learn and rehearse these skills, they are better able to interact assertively, label and modulate emotions, endure distress, inhibit dysfunctional behaviours, and so forth (Robins & Chapman, 2004). As such, the group component has been identified as an essential aspect of the standard intervention (Koerner & Linehan, 2000) and most amenable to adaptations of DBT (Koerner, Dimeff, & Swenson, 2007). Although the intervention in the current study contained the standard components of Linehan's treatment for adults (Linehan, 1993),

the standard DBT treatment model was not implemented because of situational difficulties (e.g., funding/resources, staffing, training) that are common barriers to the widespread use of standard DBT in publicly funded mental health organizations (Scheel, 2000). The skills group was offered as an "added value" intervention that was supplementary to TAU.

Groups were implemented in a closed group format. Sessions were approximately 120 minutes in length and included a scheduled break with food and beverages. The group maintained the structured psychoeducational format of standard DBT, and it was offered in a classroom-like setting with power-point presentation, binders, and handouts. The first hour of each group session was a review of skills presented in the last group and review of practice during the previous week. The second hour involved the presentation of new skills. Each of the skills modules was presented once and in accordance with the DBT treatment manual. Clients were provided homework assignments and encouraged to complete them outside of group. Please refer to Linehan's (1993b) treatment manual for a comprehensive description of the four skills modules. In the current study a fifth module, "Walking the Middle Path" was included in the group. Miller and colleagues (2007) developed this module to address problem areas associated with adolescent-family dilemmas and to deal with polarized thinking, feeling, and acting.

As part of the intervention, the principal investigator offered consultation meetings to clinicians who had clients participating in the treatment group. The goal was to address the content of the group, explore of ways to generalize learned skills to practical situations, assist with monitoring of homework assignments, and to provide

a support system for clinicians (Miller, Neft, & Golombeck, 2008; Wasser, Tyler, McIlhaney, Taplin, & Henderson, 2008). Unfortunately, attendance of these meetings was not consistent enough to be included in the analyses.

An expanding body of literature cautions against the direct transfer of adult treatment to younger populations, and highlights the need to address developmental factors (e.g., the family system) in the development of interventions for youth (Woodberry & Popenoe, 2008). In the current study, a multifamily group format (i.e., the involvement of parents) was adopted for the DBT skills group. The design and format of the treatment group was modeled after other successful outpatient DBT programs for adolescents (e.g., Miller, Rathus, Linehan, Wetzler, & Leigh, 1997). Researchers who have included family members in their skills group have found this particular modification to be a realistic and successful component of their program. Parent involvement in the group tends to improve dysfunctional and invalidating home environments, enhance generalization and maintenance of skills, and help family members to act as coaches (Miller, Rathus, & Linehan, 2007).

The 12-month protocol was shortened to a 12-week version to address the high rates of treatment non-compliance among adolescents and to assist adolescents with perceiving therapy completion as an achievable goal. Researchers have found positive outcomes for DBT skills groups ranging from a two-week inpatient group (Miller, Eisner, & Allport, 1994) to a 12-month community outpatient group (Spoont, Sayer, Thuras, Erbes, & Winston, 2003). Although 12-month group programs have been found to be most effective (Harley, Baity, Blais, & Jacobo, 2007), the greatest treatment effects happen during the first four months of treatment. The remaining

months are considered a period of skills consolidation (Linehan, Armstrong, Suarez, Allmon, & Heard, 1999).

Written materials used in standard DBT lectures were simplified to address the developmental level of adolescents. Material was displayed in power point presentations to aid in information comprehension and retention. Experiential activities were used to increase engagement, sustain attention, and teach abstract concepts. These adaptations are consistent with other adolescent DBT treatment (Woodberry & Popenoe, 2008) and were drawn largely from Miller and colleagues' (1997) 12-week curriculum.

3.9 Analytic Plan

Sample characteristics were described with descriptive statistics. Repeated measures analysis of variance (ANOVA) was used to assess the effect of DBT on dependent variables across three time periods. A notable concern that arises when performing multiple tests on a set of data is that the null hypothesis is more likely to be rejected when it is, in fact, true. A Bonferroni correction was not conducted to correct for the inflation of the alpha level (i.e., a "Type 1" error) in the current study; rather, we set the alpha level at .01—a more liberal strategy than a Bonferroni correction. Prior to conducting the primary analyses, z-score calculations for each measure's total score were used to detect outliers. Outlier scores were changed to the mean plus two times the standard deviation (Field, 2005). Assumptions of normality and linearity were met with an examination of histograms and scatter plots as well as the Kolmogorov-Smirnov and Shapiro-Wilk tests (Field, 2005; Pallant, 2006). Homogeneity of variance was met using Levene's Test for Equality of Variance.

Statistical analyses were conducted using SPSS for Windows (Version 11; SPSS, Chicago, IL, USA).

To analyse whether a participant's observed change on a dependent variable was clinically significant, Jacobson and Truax's (1991) criteria were used. An adolescent was considered clinically changed or recovered when his or her score on symptom measure moved from the "dysfunctional population" range into the "functional population" or normal range (Evans, Margison, & Barkham, 1998). The cut-off points for normal functioning on outcome measures were based on respective test manuals.

The APA (2001) recommends that some index of effect size or strength of relationship be routinely reported (Field, 2005). To assess the effect of the treatment on the dependent variables, Cohen's *d* was used (Cohen, 1977). The value of Cohen's *d* was calculated using the means and standard deviations of two groups (e.g., baseline and post-treatment data).

Treatment retention was addressed with independent-samples *t*-tests (two-tailed) to determine differences between treatment completers and treatment non-completers on a number of continuous variables. Chi-square analyses using Fisher's Exact Test was used to examine differences between these two groups on categorical variables.

To address the issue of attrition in the current study, analyses were run for the entire sample using intention-to-treat-analysis (ITT). For missing values after the start of the treatment, the last observation was carried forward to the end point. For this analysis, a larger sample for each symptom measure was obtained, with the

requirement being that there was at least one data point to carry forward and use as a replacement value for missing data. The ITT analysis was followed by a per-protocol (completer) analysis.

Ratings of group and satisfaction with services were examined using descriptive statistics. Scores on evaluation measures were correlated with adolescent demographics and symptom levels to explore whether or not relationships existed among these variables. Pearson's product-moment correlation coefficient was used to perform a bivariate correlation. Before conducting the analyses, the data were checked to make sure that the assumptions of linearity and normality were met with an examination of scatter and normality plots (Norusis, 2000).

In sum, this study signifies an attempt to conduct a examination of the utility and practical applicability (i.e., the aim of "real world" feasibility studies; Hayes, Barlow, & Nelson-Grey, 1999) of a treatment approach (DBT) for adolescents with BPD within a naturalistic system of care.

CHAPTER IV: RESULTS

4.1 Sample Characteristics

Demographic data and clinical characteristics are presented in Table 1. As shown in the table, the majority of the adolescent sample was female (95%), and had a mean age of 16 years. Most youth resided at home (82%). The remaining adolescents (18%) were residing in a group home or independently. Approximately (91%) of the sample met at least five out of nine DSM-IV diagnostic criteria for BPD as measured by the BPD interview in the SCID-II (First, Gibbon, Spitzer, Williams, and Benjamin, 1997). The remaining 9% could be considered to have strong traits of BPD (4 of 9 symptoms). The baseline assessment was intended to identify a participant pool that reflected teens who were presenting with the most impairing and dysfunctional aspects of BPD. They were not diagnosed with BPD. As noted before, the diagnosis of BPD is associated with a number of uses of pejorative terminology. The point can be argued that part of the solution to addressing the intense misery of this population is not to readily label individuals, particularly youth, but, rather, to provide individuals who present with a constellation of symptoms consistent with BPD with scientifically sound treatment techniques based on a theory of BPD that is nonjudgmental in tone and engenders a compassionate attitude.

Axis I Diagnoses

The MACI (Millon & Davis, 1993) was used to identify clinical characteristics in the sample population at baseline. According to the MACI, T scores that exceed 75 are considered clinically significant and indicate the presence of symptoms consistent with a clinical syndrome. Approximately 56% of the sample had

clinically elevated scores on the suicidal tendency scale suggesting thoughts of self-harm suicide, hopelessness, lack of purpose or direction in life, feelings of guilt, and ineffective problem solving. Thirteen percent (3/20) of adolescents in the participant pool denied a history of suicide attempts. Thirty one percent (n = 7) reported at least one past suicide attempt and 50% (n = 10) reported multiple attempts. These findings are particularly concerning given that suicide risk has been found to increase exponentially as additional problems accrue (e.g., up to a 277% increase with six or more problems), up to 11% of teen suicide attempters will actually end up dying by suicide, and up to 77% of adolescent suicide attempters do not attend or complete treatment (Miller & Dubois, 2008). With respect to self-injurious behaviour, 18% (4/21) of teens indicated that they had never self-harmed, 22% (n = 5) reported at least one episode of past self-harm, and 54% (n = 12) engaged in current self-harm behaviours. Self-injurious behaviours included cutting, scratching, and burning. Based on file review, 36% of the adolescent sample had previous hospitalisations for psychiatric reasons.

Over half of the adolescent participants (63%) had more than one Axis I diagnosis. The most common diagnoses were Major Depressive Disorder (MDD) (36%) and Mood Disorder NOS (13%). Seventy nine percent (15/19) of adolescents were using medication at the time of treatment. Based on file review, the most common medication was antidepressants (45%) followed by stimulants (18%).

In this study, approximately 75% of the sample had clinically significant problems characteristic of a DSM-IV diagnosis of depression (e.g., sadness, apathy, low energy, feelings of hopelessness, social withdrawal, etc.) Twenty five percent of

Table 1. Baseline Demographic Data and Clinical Characteristics (n = 22)

Baseline Demographic Data	*N*	Sample Value
Age (in years)		
Adolescent	22	16.32 (1.460)
Parent	20	46.64 (6.27)
Gender		
Adolescents	22	95.5% female
Parent	20	90% female
Parent Employment Status		
Unemployed	1	5%
Unknown	1	5%
Working FT or PT	18	90%
Adolescent Ethnicity/Race		
Caucasian	14	63.6%
Aboriginal	2	9.1%
Romanian	1	4.5%
Not reported	5	22.7%
Baseline Clinical Characteristics		
Psychotropic Medications:		
None	4	18.2%
Antidepressants	10	45.5%
Psycho-Stimulants	4	18.2%
Anti-Obsessional	1	4.5%
Primary Axis I Diagnosis:		
Major Depressive Disorder	8	36.4%
Mood Disorder NOS	3	13.6%
Dysthymic Disorder	1	4.5%
Bipolar Disorder	1	4.5%
ADHD	4	18.2%
Eating Disorder NOS	1	4.5%

the adolescent sample reported clinically significant problems with chronic fear and worry, indecisiveness, and hypersensitivity. Thirty one percent of the sample reported clinically significant problems with impulsiveness suggesting tendencies to act out without much provocation, poor control over behaviour in areas such as sexual, aggressive and risk-taking, and temperamental because of emotional dysregulation. Thirty one percent of adolescents reported characteristics indicative of eating disturbances associated with anorexia and bulimia.

The current findings regarding Axis I psychopathology (e.g., depression, anxiety, disordered eating) in this sample of teens is consistent with research that has found co-morbidity to be the norm rather than the exception (Katz, Cox, Gunasekara, Miller, 2004; Rathus & Miller, 2002; Woodberry & Popenoe, 2008). The volume and severity of problems makes it hard to use standard interventions developed for adolescents (e.g., other forms of CBT, interpersonal therapy) that are designed to address one primary problem at a time (e.g., depression, interpersonal problems); in fact, treatment studies often rule out youth who present with self-injurious behaviours and co-morbid psychopathology (Miller, Rathus, & Linehan, 2007; Rathus and Miller, 2002). In contrast, DBT employs a methodical approach to address all dysfunctional behaviours that involves strategies such as a collaborative behavioural analysis; hypotheses about various origins influencing the problem; developing potential solutions; and experimentation with, and evaluation of, these solutions (Linehan, 1993a; Sanderson, 2003). As such, DBT may have a broader impact then other interventions specifically for suicidal multiproblem adolescents who present with symptoms consistent with BPD because of its specific focus on the complexity

and severity of comorbid problems in these clients.

4.2 Analyses of Primary Outcomes

4.2.1 Severity of BPD Thoughts, Feelings, and Behaviours

Pre/post-treatment means, standard deviations, and effect sizes are shown in Table 2. Results are depicted graphically in Figure 2. Repeated measures ANOVA revealed no significant changes between pre and post-treatment on self-reported negative thoughts and feelings ($F = 2.22$; $p = .13$), negative behaviours ($F = 3.67$; $p = .03$), or positive coping ($F = 2.73$; $p = .07$) as measured by the Borderline Evaluation of Severity over Time (BEST). Visual inspection of the means for each of these subscales reveals a trend over time towards a reduction of negative thoughts, feelings, and behaviours scores and an increase in positive coping. Small effect sizes were revealed from pre- to post-treatment for negative thoughts and feelings ($d = .33$), negative behaviours ($d = 0.38$) and for positive coping ($d = -.32$).

Paired samples *t*-tests showed no statistical differences between post-treatment and follow-up on the negative thoughts and feelings subscale ($t = -0.69$; $p = 0.56$; $d = -0.05$], negative behaviour subscale ($t=-0.10$; $p = .92$; $d = -0.57$), or positive coping subscale ($t = -1.31$; $p = .31$; $d = -0.63$) of the BEST.

Table 2. Pre/post-Treatment Means, Standard Deviations, and Effect Sizes for Borderline Severity.

Measure	Week 1 M (SD)	Week 6 M (SD)	Week 12 M (SD)	p	*d*
BEST (n = 21)					
BEST: A	26.80 (5.46)	26.55 (6.77)	24.30 (9.18)	.14	0.33
BEST: B	11.45 (4.12)	10.40 (3.66)	9.90 (4.13)	.04	0.38
BEST: C	8.10 (2.27)	9.45 (2.89)	9.05 (3.57)	.08	-0.32

BEST: A = Negative thoughts and feelings, BEST: B = Negative behaviours, BEST: C = Positive Coping, BSS = Beck Scale for Suicidal Ideation

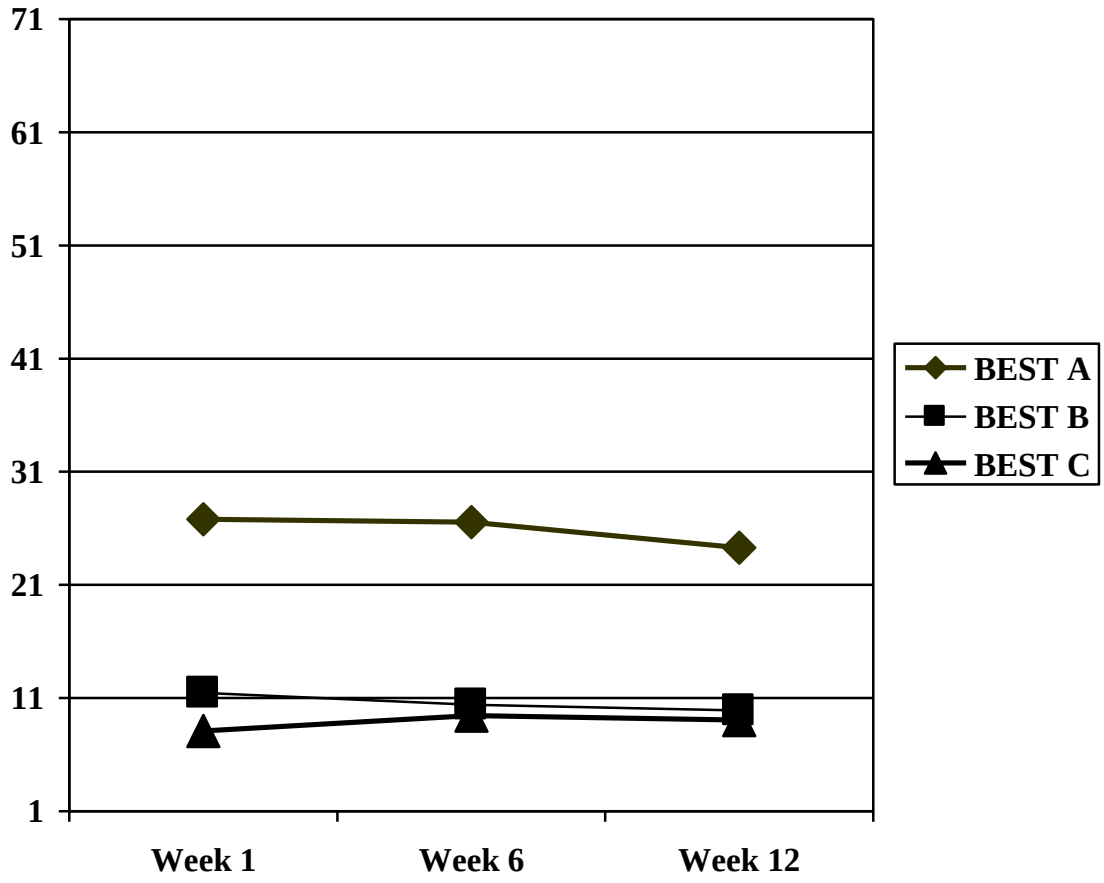

Figure 2. Line Graph of Mean Scores on the BSS. BEST: A = Negative Thoughts & Feelings, BEST: B = Negative Behaviours, BEST: C = Positive Coping.

4.3 Analysis of Secondary Treatment Outcomes

4.3.1 Suicidal Attitudes and Behaviour

Pre/post-treatment means, standard deviations, and effect sizes are shown in Table 3. Results are depicted graphically in Figure 3. Repeated measures analysis of variance (ANOVA) showed no significant differences from pre- to post-treatment for subscale 1 ($F = 2.01$; $p = .16$), subscale 2 ($F = .56$; $p = .48$), or the total score ($F = .81$; $p = 41$) as measured by the Beck Scale for Suicidal Ideation (BSS). The effect size for subscale 1 was small ($d = .26$). No treatment effects were found for subscale 2 ($d = .14$) or for the BSS total score ($d = .15$). Comparisons of symptom levels at post-treatment and 3-month follow-up could not be conducted because no participants completed these measures at follow-up.

Paired samples *t*-tests showed no statistically significant reduction between pre and post-treatment on the suicidal tendency scale ($t = .95$; $p = .49$; $d = .49$) as measured by the Millon Adolescent Clinical Inventory (MACI). There was a trend towards a reduction of the scores on the suicidal tendency scale from pre- ($M = 69.00$, $SD = 32.98$) to post-group ($M = 64.81$, $SD = 33.87$). The effect size for suicidal tendency was moderate ($d = .49$). Scores on self-reported suicidal tendency, as measured by the MACI, decreased from pre- to post-group from the “severe” to “normal” range for two of nine youth.

Table 3. Pre/post-Treatment Means, Standard Deviations, Effect Sizes for Measures of Suicidal Behaviour, Depression, Anxiety, and Family Functioning.

Measure	Week 1 M (SD)	Week 6 M (SD)	Week 12 M (SD)	p	*d*
BSS (n=21)					
Subscale 1	3.38 (2.77)	2.86(2.67)	2.66(2.73)	.16	0.26
Subscale 2	9.85 (7.41)	9.35 (6.67)	8.85 (7.36)	.48	0.14
CDI (n = 20)					
Total Score	72.05(12.63)	69.60(12.41)	64.60(15.81)	.02	0.52
Interpersonal Problem	58.50(11.10)	61.20(10.54)	63.55(13.96)	.14	-0.40
Ineffectiveness	65.10(9.22)	66.80(8.71)	60.30(8.49)	.02	0.54
Anhedonia	60.00(14.96)	61.45(10.99)	58.80(12.25)	.59	0.09
Negative Self-Esteem	65.90(14.49)	64.00(13.38)	60.55(16.46)	.16	0.35
Negative Mood	71.60(12.73)	67.80(13.24)	64.10(17.61)	.07	0.29
MASC (n = 20)					
Physical Symptom	59.50(13.93)	55.35(17.40)	58.00(12.58)	.19	0.11
Harm Avoidance	43.05(11.94)	41.95(10.39)	40.80(10.46)	.48	0.20
Social Anxiety	60.25(11.46)	59.95(10.20)	58.80(10.57)	.29	0.13
Separation/Panic	52.55(13.44)	51.10(12.48)	50.75(12.37)	.38	0.14
Total Score	58.85(12.24)	57.75(11.92)	55.55(13.17)	.06	0.26
Anxiety Disorder	55.30(12.17)	53.95(12.80)	53.10(12.68)	.20	0.18
CBCL (n = 20)					
Withdrawn/Depressed	71.45(11.06)	70.55(9.73)	70.20(10.48)	.30	0.12
Affective Problems	77.15(7.84)	75.30(8.99)	75.30(9.21)	.03	0.22
Anxious/Depressed	73.95(9.71)	71.40(9.52)	70.60(10.36)	.02	0.33
Anxiety Problems	66.85(7.56)	65.65(7.94)	65.65(8.58)	.24	0.15
OCD Problems	68.65(10.01)	66.50(8.70)	65.75(8.92)	.08	0.31
PTSD	74.30(9.88)	71.20(10.14)	71.60(10.85)	.01	0.26
FAM-III (n = 13)					
Task Accomplishment	59.38(8.77)	60.62(11.67)	57.85(7.68)	.38	0.19
Role Performance	62.77(9.61)	64.31(13.03)	62.00(11.02)	.30	0.07
Communication	59.69(6.97)	59.54(8.87)	55.85(7.72)	.05	0.52
Affective Expressions	57.23(7.85)	56.15(8.70)	54.62(12.09)	.40	0.30
Involvement	57.54(6.44)	56.46(6.44)	53.23(7.24)	.01	0.95
Control	59.08(7.51)	58.46(8.53)	54.46(9.17)	.04	0.55
Values and Norms	56.77(8.35)	56.15(6.66)	55.38(9.61)	.58	0.15

CDI = Child Depression Inventory, MASC = Multiphasic Anxiety Scale for Children
CBCL = Child Behaviour Checklist, FAM-III = Family Assessment Measure – 3 Ed.

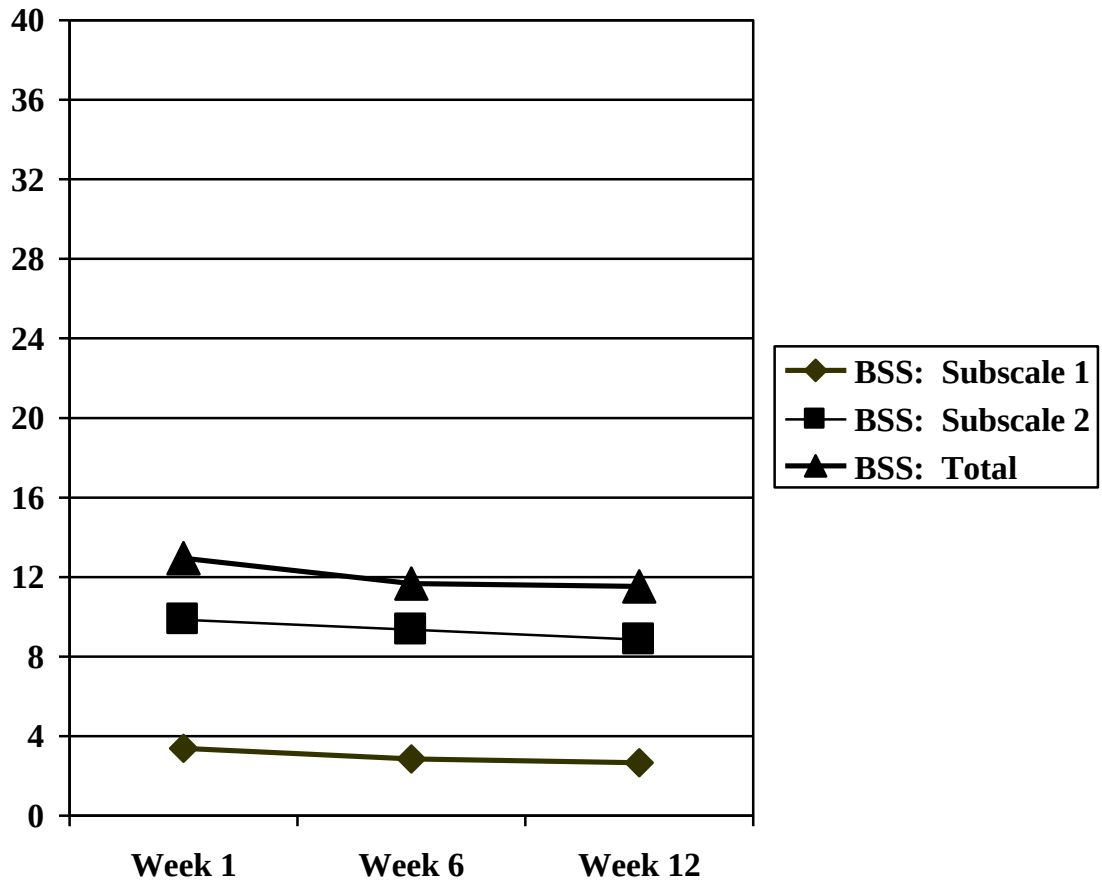

Figure 3. Line Graph of Mean Scores on the BSS.

BSS = Beck Scale for Suicidal Ideation

4.3.2 Depression

Self-Report. Pre/post-treatment means, standard deviations, and effect sizes for depression is shown in Table 3. Self-reported depression is depicted graphically in Figure 4. Repeated measures ANOVA showed no significant differences from baseline to post-treatment on self-reported symptoms of depression as measured by the Children's Depression Inventory (CDI) including total depression ($F = 4.46$; $p = .02$); ineffectiveness ($F = 4.17$; $p = .02$); interpersonal problems ($F = 17.8$; $p = .14$), anhedonia ($F = .411$; $p = .59$), negative self-esteem ($F = 2.07$; $p = .16$), or negative mood subscales ($F = 2.916$; $p = .06$). Visual inspection of mean scores revealed a reduction in scores over time for ineffectiveness, anhedonia, negative self-esteem, negative mood subscales and depressive affect scale suggesting a trend towards improvements in multiple domains of depression.

Medium effect sizes were revealed for the total score ($d = 0.52$) and for ineffectiveness ($d = 0.54$). Small effect sizes were revealed for interpersonal problems ($d = -0.40$) (negative effect size indicates deterioration), negative self-esteem ($d = .35$), and negative mood ($d = .29$) as measured by the CDI. A large effect size was shown from baseline to post-treatment for depressive affect ($d = 1.04$) as measured by the MACI.

Mean scores on the CDI decreased from "very much above average" at pre-treatment to "slightly above average" at post-treatment indicating a "normal" level of functioning compared to children of similar age and gender. Specifically, four of seven adolescents with clinical levels of depression at baseline indicated a return to normal functioning at post- treatment.

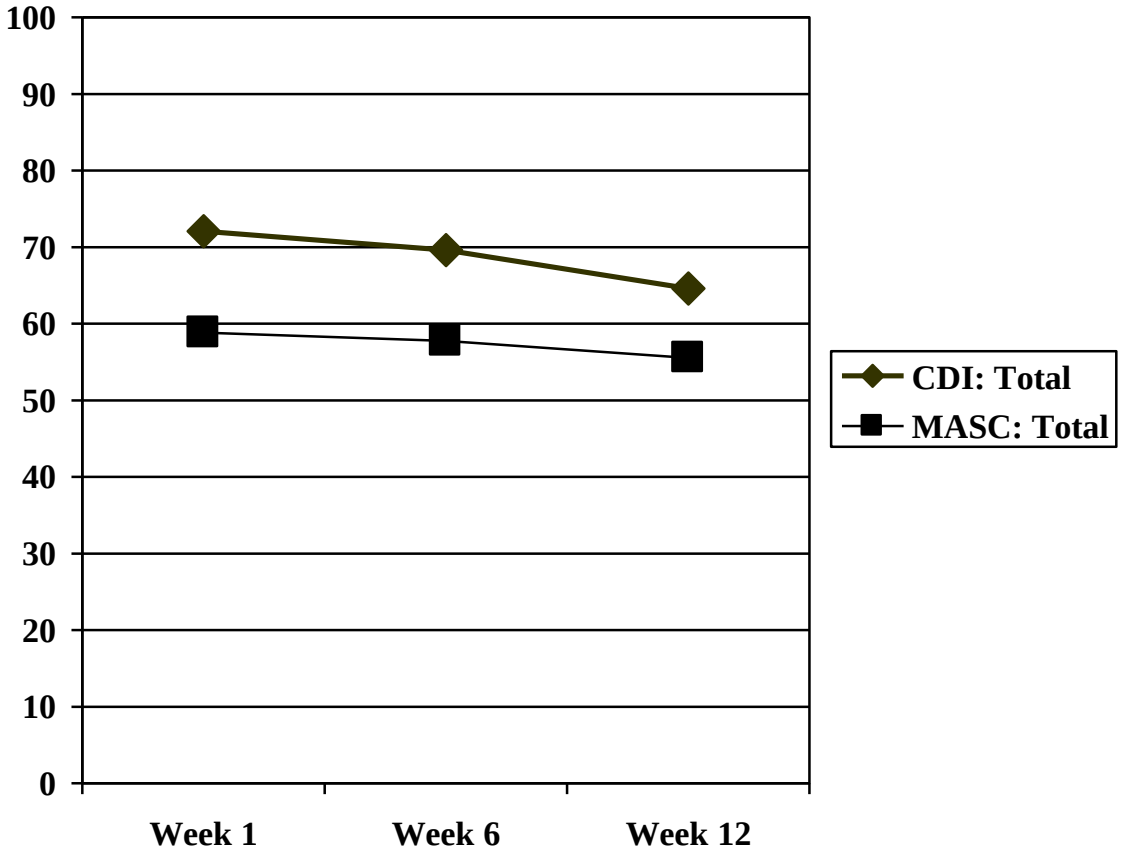

Figure 4. Line Graph of Mean Scores on the CDI and MASC.

CDI = Child Depression Inventory; MASC = Multidimensional Anxiety Scale for Children

Paired sample t-tests showed no significant changes from post-treatment to follow-up on total depression (t = -0.13; p = 0.90; d = -0.01), ineffectiveness (*t* = 0.00; p = 1.00; d = 0), anhedonia (t = 0 .25; p = 0.82; d = 0.09), interpersonal problems (t = 1.00; p = 0.42; d = 0.23), negative self-esteem (t = -1.00; p = 0.42; d = -0.09), or negative mood (t = -1.00; p = 0.42; d = -0.12).

Parent-Report. Results are shown in Table 3. Results are depicted graphically in Figure 5. Repeated measures ANOVA showed no significant differences from pre- to post-treatment for on affective problems (F = 3.84, p = .03) or withdrawn/depressed (*F* = 1.24; p = .30) as measured by the Child Behavior Checklist (CBCL). Visual inspection of mean scores showed a reduction in scores for affective problems (t = 0.62; p = 0.81) indicating a trend towards improvement following completion of the group treatment.

Results indicate a small effect size for affective problems from Week 1 to Week 6 (d = 0.22), no effect size from Week 6 to Week 12 (d=0.00), and a small effect size from Week 1 to Week 12 (d=0.22). No effect sizes were found for withdrawn/depressed from Week 1 to Week 6 (d = 0.08), from Week 6 to Week 12 (d = 0.03), or from Week 1 to Week 12 (d = 0.12).

Scores on the affective problems subscale decreased between pre- and post-treatment from “severe” to “normal” range for two of 19 parents. Scores on the withdrawn/depressed subscale decreased from “severe” to “normal” range for one of 15 parents.

Paired sample *t*-tests revealed no statistically significant differences from post-treatment to follow-up on parent-report affective problems or

withdrawn/depressed.

4.3.3 Anxiety

Self-report. Results are shown in Table 3. Results are depicted graphically in Figure 4. Repeated measures ANOVA revealed no significant differences from pre- to

post-treatment on self-reported anxiety as measured by the Multidimensional Anxiety Scale for Children (MASC) including physical symptoms ($F = 1.78$; $p = .19$); harm avoidance ($F = .74$; $p = .48$); social anxiety ($F = 1.21$; $p = .29$); separation/panic ($F = .93$; $p = .37$); total score ($F = 3.50$; $p = .05$); anxiety disorder index ($F = 1.66$; $p = .20$). Visual inspection of mean scores from pre- (M = 62.63; SD = 18.33) to post-group (M = 59.75, SD = 21.32) suggests a trend towards a reduction in anxious feelings over time.

A small effect size was found from baseline to post-treatment for harm avoidance (d = .20), the total score (d = .26), and anxiety disorder index (d = .18). No effect size was revealed over time for physical symptom (d = .11), social anxiety (d = 13), or separation/panic (d = .14). Scores on the MASC decreased from "severe" range at baseline to "normal" range for one of four participants.

Paired sample *t*-tests showed no statistically significant reductions from post-treatment and follow-up on self-reported anxiety as measured by the MASC including physical symptom ($t = 0.00$; p = 1.00; d = 0.00), harm avoidance (t = 1.29, p = 0.32) (follow-up scores were lower than scores at baseline and post-treatment), social anxiety (t = .62; p = 0.59; d = 0.19] (follow-up scores were lower than scores at post-treatment), separation/panic (t = 1.24; p = 0.34) (follow-up scores were lower than

scores at baseline and post-treatment), anxiety disorder index (t = 0.87; p = 0.47), or the total score (t = 1.10; p = 0.38). From post-treatment to follow-up, a large effect size was found for separation/panic (d = 0.86) and a moderate effect size was revealed for harm avoidance (d = 0.76). A small effect size was found for the anxiety disorder index (d = 0.38) and for the Total Score (d = 0.28). These results indicate that the effects of group intervention continued following exposure to treatment.

Parent-Report. Results are shown in Table 3. Repeated measures ANOVA revealed no significant differences from baseline to post-treatment for anxiety problems (F = 1.51; *p* = .24), anxious/depressed (F = 4.84; p = .02), or OCD problems (F = 3.23; p = .07) as measured by the Child Behavioral Checklist. Significant reductions were found from baseline to post-treatment for PTSD symptoms (F = 6.15; p = .01). Post-hoc analyses of significant pair-wise comparisons revealed significant differences from pre- to mid-treatment on PTSD (Mean Difference of 3.10; *p* = .018).

Between baseline and post-treatment, no effects size was shown for anxiety problems (d = .15). A small effect size was found for anxious/depressed (d = 0.33), PTSD (d = .26) and OCD (d = 0.31) from pre- to post-treatment.

Scores for anxiety problems remained in the “severe” range at post-treatment (n = 12). Scores for withdrawn/depressed decreased from “severe” range at baseline to “normal” range at post-treatment for two of 19 respondents. In fact, deterioration in functioning was found for one participant who had at baseline scored within the normal functioning range. Scores for anxious/depressed decreased between pre- to post-treatment from “severe” to “normal” range for two of 18 participants. Scores for PTSD decreased between pre- to post-treatment from the “severe” to the “normal”

range for two of 17 participants. Scores for OCD decreased from "severe" range at baseline to "normal" range at post-treatment for three of 13 participants from pre- to post-treatment.

Paired sample *t*-tests revealed no statistically significant differences from post-treatment to follow-up on any of the CBCL subscales. Mean scores showed a reduction in scores on the anxious/depressed (t = 0.71; p = 0.55; d = 0.16) and PTSD (t = 0.82; p = 0.49; *d* = 0.09) indicating a trend towards improvement for these two subscales.

4.3.4 Family Functioning

Results are shown in Table 3. Results are depicted graphically in Figure 6. Repeated measures ANOVA revealed a significant reduction from baseline to post-treatment for family involvement (F = 5.30; p = .01) as measured by the Family Assessment Measures, Third Edition (FAM-III). Pairwise comparisons indicated significant differences between scores at pre- and post-treatment (mean difference of 4.308; p = .03). No significant differences were found between baseline and post-treatment in any additional areas of family functioning including task accomplishment (F = .90; p = .38), role performance (F = 1.23; p = .30), communication (F = 3.451; p = .04), control (F = 3.72; p = .40), overall rating (F = 3.99; p = .03), affective expression (F = .856; p = .40), values and norms (F = .556; p = .58), social desirability (F = .791; p = .42), or defensiveness (F = 1.19; p= .30).

From pre- to post-treatment, a small effect size was found for affective expression (d = 0.30), social desirability (d = 0.31), and overall rating (d = 0.37). A medium effect size was found for task accomplishment (d = 0.52) and control (d =

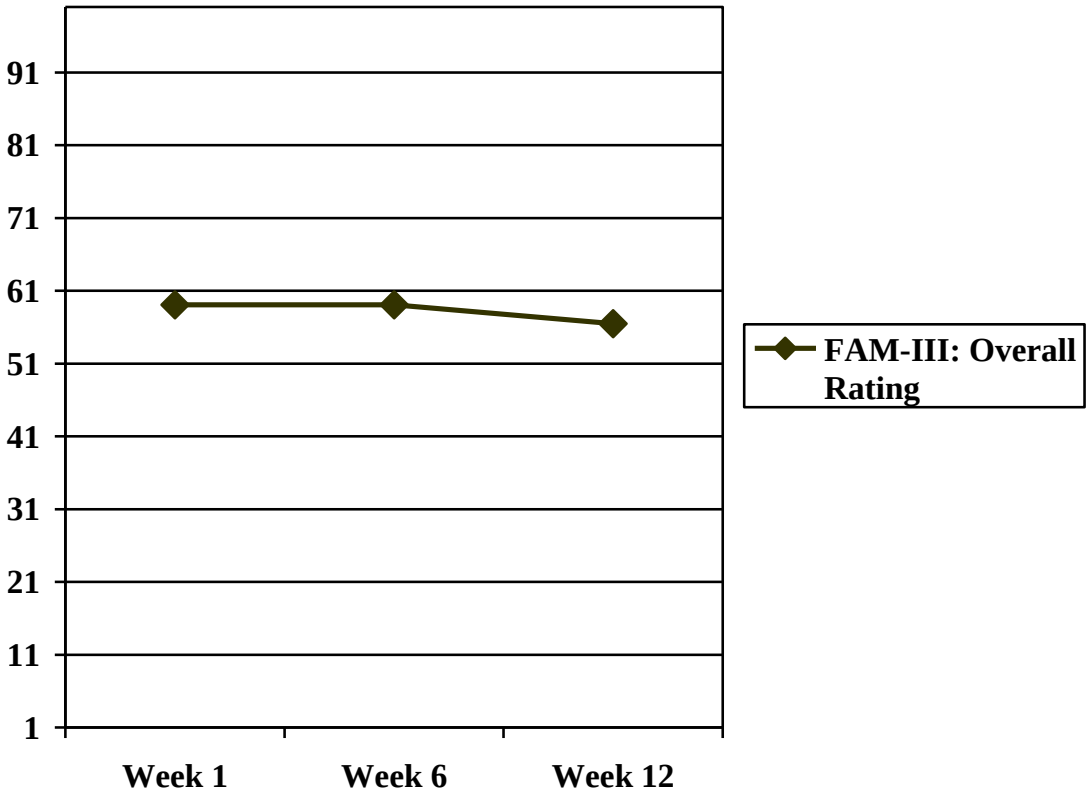

Figure 5. Line Graph of Mean Scores on the FAM-III: General Scale

FAM-III = Family Assessment Measure – 3rd Edition.

0.55). A large effect size was revealed from pre- to post-treatment for involvement (d = 0.95). Scale scores on the involvement subscale decreased from the "severe" range at baseline to the "normal" range at post-treatment for both respondents. Scale scores on the task accomplishment subscale decreased from the "severe" range at baseline to the "normal" range at post-treatment for one of three parents. Clinically meaningful changes were found from pre- to post-treatment for one parent on role-performance, communication, control, and values and norm subscales, respectively. Contrary to our expectations, the number of parents reporting clinically significant scores on the affective expressions scale increased from pre-treatment to post-treatment from one to three. No change was found over the duration of the group intervention on the overall rating, social desirability, or defensiveness subscales.

Paired sample *t*-tests revealed no significant change between post-treatment and follow-up on task accomplishment (t = -1.60, p = 0.25), control (t = -6.50, p = 0.02), social desirability (t = 4.00, p = 0.05), role performance (t = -1.89, p = 0.19), communication (t = -1.00, p = 0.42), affective expression (t = -1.57, p = .25), involvement (t = -1.94, p = 0.19), overall rating (t = -0.57, p = 0.62), and defensiveness (t = .65, p = 0.58). The correlation and t could not be computed for Values and Norms, as the standard error of the difference was 0.

From post-treatment to follow-up, a large effect size was revealed for task accomplishment (d = -1.58), role performance (*d* = -1.13), control (*d* = -0.82), overall rating (*d* = 0.86), and social desirability (*d* = 0.90). A medium effect size was revealed for involvement (*d* = -0.56), defensiveness (*d* = 0.51), and affective expressions (*d*=-0.70). A small effect size was found for values and norms (*d* = -

0.31).

4.4 Treatment Completers Analyses

Repeated measure ANOVA was used to evaluate change on outcome variables for treatment completers. Results are shown in Tables 4 and 5. Statistically significant differences were revealed for completers on several outcome measures that were not observed in the sample as a whole. Specifically, the treatment completer group demonstrated significant improvements between pre and post-treatment on the negative thoughts and feelings subscale of the BEST as well as on the CDI total score, indicating reduced impairment in BPD symptoms and overall levels of depression at the end of treatment. Significant differences that were observed for the group as a whole but not for the treatment completers' sample included the PTSD subscale on the CBCL. The Involvement subscale on the FAM-III remained statistically significant (p = .010; d = .78) for the treatment completers.

A significant problem in the interpretation of these findings was the attrition rate, which can limit generalisability of the data. ITT analysis is a conservative method that was utilized in the current study, making it more difficult than with a per-protocol (completer) analysis to achieve significant differences. Results of a supplementary per-protocol analysis were largely consistent with the ITT, and only small differences in findings were observed. Specifically, treatment completers reported significantly fewer negative thoughts and feelings associated with BPD and improvements in depression. As such, the results of the supplementary analysis offer support for the conclusions that were reached from the original analysis. Further, the internal and external validity of study results was strengthened by use of both

Table 4. Results of Adolescent Per-Protocol Analysis (n = 11)

Measure	Week 1 Mean (SD)	Week 6 Mean (SD)	Week 12 Mean (SD)	*p*	*d*
BEST: Subscale A	24.36(4.10)	23.00(4.36)	19.36(7.02)	.001	0.87
BEST: Subscale B	10.09(3.30)	8.72(1.85)	7.82(2.56)	.03	0.77
BEST: Subscale C	7.91(2.12)	9.55(2.66)	8.91(3.99)	.24	-0.31
BSS: Subscale 1	2.90(2.62)	2.36(2.01)	2.00(2.04)	.26	0.38
BSS: Subscale 2	7.00(6.05)	6.90(5.42)	6.20(6.79)	.76	0.12
BSS: Total	9.90(8.00)	8.63(7.01)	8.63(8.34)	.69	0.16
CDI: Total Score	72.27(13.66)	67.90(13.25)	61.0(17.68)	.01	0.71
Interpersonal Problems	66.81(17.37)	61.63(12.26)	56.72(12.9)	.06	0.66
Ineffectiveness	66.09(9.23)	67.27(7.72)	58.09(9.61)	.02	0.85
Anhedonia	62.90(11.24)	60.27(12.60)	56.72(14.85)	.11	0.47
Negative Self-Esteem	64.63(14.44)	62.90(14.66)	58.36(18.53)	.24	0.386
Negative Mood	71.72(13.49)	64.36(12.91)	59.54(18.11)	.05	0.76
MASC Physical Symptom	59.27(14.88)	52.81(19.83)	57.63(11.58)	.26	0.12
Harm Avoidance	44.72(13.30)	42.09(11.51)	40.00(11.54)	.31	0.38
Social Anxiety	59.00(12.52)	59.54(10.40)	57.45(10.90)	.41	0.13
Separation/ Panic	52.18(14.90)	49.09(13.04)	48.45(12.73)	.24	0.27
Total Score	59.36(11.16)	57.90(10.13)	53.90(12.49)	.03	0.46
Anxiety Disorder Index	56.45(10.83)	54.18(12.09)	52.63(11.83)	.16	0.34

BEST: A = Negative thoughts and feelings; BEST: B = Negative behaviours; BEST: C = Positive Coping; CDI = Child Depression Inventory; MASC = Multidimensional Anxiety Scale for Children

Table 5. Results of Parent Per-Protocol Analysis (n = 10)

Measure	Week 1 Mean (SD)	Week 6 Mean (SD)	Week 12 Mean (SD)	*p*	*d*
CBCL					
Anxious/Depressed	76.20(7.42)	72.60(7.96)	71.00(10.08)	.04	0.59
Withdrawn/Depressed	71.90(11.59)	70.50(8.60)	69.80(10.27)	.44	0.19
Somatic Complaints	73.90(14.16)	68.90(10.40)	72.00(10.44)	.21	0.15
Social Problems	67.90(10.91)	64.30(12.03)	64.10(10.99)	.08	0.34
Thought Problems	70.90(6.27)	68.40(7.76)	70.70(6.86)	.06	0.03
Attention Problems	70.50(8.55)	67.70(7.94)	69.00(8.19)	.24	0.17
Rule-breaking Behaviour	59.60(7.24)	59.70(7.42)	59.00(7.98)	.83	0.08
Aggressive Behaviour	63.20(12.84)	61.40(10.80)	61.90(11.70)	.24	0.11
Internalizing Prob.	75.40(8.80)	72.40(6.31)	71.80(9.49)	.11	0.39
Externalizing Prob.	60.80(10.19)	60.10(9.70)	59.90(10.10)	.56	0.08
Total Problems	71.20(8.23)	68.90(7.76)	68.80(9.48)	.03	0.27
Affective Problems	78.10(5.66)	74.80(7.05)	74.80(7.61)	.04	0.49
Anxiety Problems	68.10(7.14)	66.90(7.14)	66.90(8.56)	.65	0.15
Somatic Problems	72.90(15.61)	66.80(11.07)	69.60(10.46)	.22	0.24
ADHD Problems	67.00(5.09)	64.90(6.15)	65.40(5.94)	.16	0.28
ODD Problems	60.30(8.53)	59.40(8.31)	58.10(7.99)	.12	0.26
CD Problems	59.60(9.46)	59.10(8.68)	59.60(9.82)	.82	0.00
Sluggish Cog. Tempo	69.80(5.37)	62.70(22.51)	67.20(7.69)	.31	0.39
OCD Problems	71.50(8.28)	69.30(9.08)	67.80(9.93)	.04	0.40
PTSD	75.90(10.17)	71.70(8.94)	72.50(10.49)	.03	0.32
FAM-III: General Scale					
Task Accomplishment	59.00(8.49)	60.60(12.33)	57.00(6.74)	.39	0.26
Role Performance	61.40(7.54)	63.40(12.85)	60.40(9.60)	.31	0.12
Communication	60.20(7.8)	60.00(10.06)	55.20(8.65)	.05	0.60
Affective Expressions	56.80(6.67)	55.40(7.83)	53.40(12.29)	.44	0.34
Involvement	57.60(6.91)	56.20(6.89)	52.00(7.42)	.01	0.78
Control	57.80(6.62)	57.00(7.95)	51.80(7.39)	.04	0.85
Values and Norms	54.80(8.17)	54.00(5.41)	53.00(9.39)	.59	0.20
Overall Rating	57.80(5.76)	57.80(7.02)	54.40(7.64)	.03	0.50
Social Desirability	44.40(4.88)	42.20(9.25)	42.20(4.50)	.47	0.47
Defensiveness	44.40(4.59)	41.80(9.211)	44.60(3.53)	.31	-0.05

CBCL = Child Behaviour Checklist; FAM – III = Family Assessment Measure III

analyses.

4.5 Program Evaluation Results

4.5.1 Ratings of the DBT Skills Group

Means and standard deviations for participants are reported in Table 6. Item analysis revealed that participants expressed moderate to strong levels of agreement that the group sessions were helpful and useful (*M* = 1.50, *SD* = 0.92; range of 1= agree to 5= disagree). Overall, they were satisfied with the amount of time to learn new skills (*M* = 1.45; *SD* = 0.77) and with the materials provided to the group (*M* = 1.26, *SD* = 0.65). Participant's expressed moderate levels of disagreement regarding having fewer problems after the group (*M* = 2.90; *SD* = 1.44). They reported that they were much less likely to "my client learned new skills that were helpful" and "my client is less likely to harm himself/herself". Highest levels of disagreement were for the items, "My client is coping better with his/her problems" and "I have fewer interpersonal problems with my client".

4.5.2 Satisfaction with Services

Item means and standard deviations are presented in Table 7. Item analyses revealed a high level of satisfaction with the group treatment program (M = 3.42, SD=0.73; range of 1=Dissatisfied to 4=Very Satisfied). Participants were satisfied with how the group met their needs (M = 3.13, SD = 0.89) and with the overall quality of the group treatment (M = 3.69, SD = 0.47). Overall, participants thought that they would come back to the program if seeking help again (M = 3.31, SD = 0.95).

Table 6. Client and Clinician Ratings of the DBT Skills Group

Client Ratings	*n*	Mean (SD)
1. I attended more than half the sessions	19	1.00 (0.00)
2. I found the materials and handouts helpful.	19	1.57 (1.12)
3. The group sessions were helpful and useful.	18	1.50 (0.92)
4. My individual therapist agreed with what I was taught.	16	1.14 (0.39)
5. The skills I learned continue to be helpful.	17	1.52 (1.06)
6. After the group, people say I have fewer problems.	10	2.90 (1.44)
7. After the group, I have been much less likely to harm myself.	9	2.66 (1.73)
8. I found that there were enough materials provided.	19	1.26 (0.65)
9. I had enough time to discuss my intense emotions.	15	1.86 (1.24)
10. The length of sessions were not long enough.	19	4.05 (1.22)
11. The number of sessions were too much.	19	4.73 (0.56)
12. I had enough time to learn new skills.	19	1.45 (0.77)

Scores range from 1= Agree to 5= Disagree

Clinician Ratings	Mean (SD) (*n* = 5)
1. Group training was clear and understandable.	1.00 (0.00)
2. The group materials and handouts were helpful.	1.25 (0.50)
3. I felt that individual therapy during and following my client's participation in the group was beneficial.	2.00 (0.70)
4. My client learned new skills that were helpful.	1.60 (0.89)
5. My client is coping better with his/her problems.	2.20 (0.83)
6. My client is less likely to harm himself/herself.	1.80 (1.09)
7. Skills teaching and information given to clients is helpful.	1.20 (0.44)
8. I have fewer interpersonal problems with my client in therapy.	2.75 (1.50)
9. Overall, I feel that this group was helpful to my client.	1.00 (0.00)
10. Amount of materials	1.80 (1.78)
11. Length of sessions too long	4.60 (0.89)
12. Number of sessions	3.20 (1.48)
13. Time provided to learn new skills	2.00 (1.41)
14. Time provided to discuss emotions	1.80 (1.09)

Scores range from 1= Agree to 7= Disagree

3.5.3 Therapeutic Alliance

Means and standard deviations are presented in Table 8. Participant scores on a measure of therapeutic alliance at the completion of group indicated a high rating of therapeutic alliance with group facilitators (*M*= 5.48, *SD*= 0.41; range of 1=Strongly Disagree to 7=Strongly Agree). Participants strongly agreed that there were mutual liking (item #3) and mutual trust (item # 9) between themselves and the facilitator, and that the facilitator appreciated them as a person (item #7). Participants endorsed strong levels of agreement regarding the facilitator's ability to teach the skills (item #5) and that the individual therapist agreed that the group skills were important to work on (item #8).

4.5.4 Correlations

Results of the correlation analyses are presented in Table 9. As shown in the table, results revealed that CSQ-8 scores were not significantly correlated with scores on the WAI (r = .97, p = .13), showing no relationship between participant evaluation of services and the therapeutic alliance. There were no significant correlations between WAI scores and client age (r = .91, p = .25) or number of previous hospital admissions for psychiatric reasons (r = -.80, p = .40). The number of total suicide attempts was negatively correlated with WAI scores (r = 1.00, p<.001). The CSQ-8 score was not significantly correlated with any client variables (e.g., age, suicide attempts, or hospital admissions).

The CSQ-8 and WAI scores were not significantly correlated with the total number of BPD symptoms (X/9), the MACI: Borderline Tendency, or any symptom measures (e.g., BEST, BSS, CDI, MASC, CBCL, FAM) at post-treatment. The only

Table 7. Client Services Questionnaire (CSQ-8)

Question	Mean (SD) (n = 8)
1. Overall quality of the group treatment.	3.69 (0.47)
2. Obtained help wanted in group.	3.38 (0.89)
3. Group met needs	3.13 (0.89)
4. Would you recommend the group?	3.56 (0.73)
5. Satisfaction with amount of help received?	3.56 (0.73)
6. Deal more effectively with problems?	3.56 (0.73)
7. Overall satisfaction.	3.50 (0.73)
8. If seeking help again, would you return to program?	3.31 (0.95)
Total Score	3.42 (0.73)

Scores range from 1=Dissatisfied to 4=Very Satisfied

Table 8. Working Alliance Inventory

Question	*n*	Mean (SD)
1. There was agreement that the group would help improve my situation.	5	6.20 (0.84)
2. There was agreement about the usefulness of therapy (e.g., I have new ways of looking at my problems).	4	5.79 (1.45)
3. There was a mutual liking between myself and the facilitator.	4	6.75 (0.50)
4. There were doubts or a lack of understanding about what participants were trying to accomplish in group therapy.	4	1.50 (0.57)
5. I felt confident in the facilitator's ability to teach the skills.	4	6.75 (0.50)
6. I agreed with the goals of treatment.	4	6.25 (1.50)
7. I felt that the facilitator appreciates me as a person.	4	6.75 (0.50)
8. My individual therapist agreed that the skills were important for me to work on.	4	6.75 (0.50)
9. There was mutual trust between myself and the group facilitator.	4	6.75 (0.50)
10. Group facilitators and group members had different ideas about what the real problems are.	4	1.25 (0.50)
11. I have an understanding of the changes that would be good for me.	4	6.00 (.82)
12. I believe that the skills training approach to dealing with my problems is correct.	4	6.25 (0.96)

Scores range from 1=Strongly Disagree to 7=Strongly Agree

Table 9. Correlations for Variables, Satisfaction with Services, and Working Alliance

Variable		CSQ-8 (*n* = 12)	WAI (*n* = 4)
Age	Pearson Correlation	-.20	.91
	Sig. (2-tailed)	.51	.25
	N	12	3
Total Suicide Attempts			
	Pearson Correlation	.13	-1.00
	Sig. (2-tailed)	.77	0.01
	N	7	2
Prior Hospitalizations			
	Pearson Correlation	-.40	-.80
	Sig. (2-tailed)	.32	.40
	N	8	3
SCID-II BPD Symptoms			
	Pearson Correlation	-.09	.80
	Sig. (2-tailed)	.83	.40
	N	8	3
MACI: Borderline Tendency			
	Pearson Correlation	-.42	-.42
	Sig. (2-tailed)	.39	.72
	N	6	3
BEST: A			
	Pearson Correlation	-.16	-.95
	Sig. (2-tailed)	.69	.19
	N	8	3
BEST: B			
	Pearson Correlation	-.05	.91
	Sig. (2-tailed)	.88	.25
	N	8	3
BEST: C			
	Pearson Correlation	.75	.80
	Sig. (2-tailed)	.02	.40
	N	8	3
BSS: Total Score			
	Pearson Correlation	-.70	-.99
	Sig. (2-tailed)	.05	.07
	N	8	3
CDI: Total Score			
	Pearson Correlation	-.84	-.99
	Sig. (2-tailed)	.00	.08
	N	8	3
MASC: Total Score			
	Pearson Correlation	-.54	-.95

Sig. (2-tailed)	.15	.18
N	8	3
CBCL: Total Score		Cannot be computed
Pearson Correlation	-.83	because at least one
Sig. (2-tailed)	.16	variable is constant.
N	4	1
FAM-III: Overall Rating		Cannot be computed
Pearson Correlation	.23	because at least one
Sig. (2-tailed)	.76	variable is constant.
N	4	1

symptom measures to demonstrate a relationship with CSQ-8 scores were the BEST subscale for Positive Coping and the BSS: Total Score. At the end of group, CSQ-8 scores were positively correlated with scores on Positive Coping, (r = .75; p = .02). CSQ-8 scores were negatively correlated with total scores on the BSS (r = -.70; p = .05) and with total scores on the CDI (r = -.84; p = .00).

4.5.5 Descriptive Results

A summary of perceptions of the DBT skills training group is presented in this section. Valuable feedback was obtained regarding the overall experience of the sample population as well as the treatment team members who participated in this study; these results lend support for the findings of quantitative analyses. The purpose of the exploratory analysis was to develop a more comprehensive understanding of the patterns of perceptions/experiences of adolescents, parents, and treatment team members regarding the intervention services that were delivered (Miles & Huberman, 1994; Pullin, 1994; Strauss & Corbin, 1998). Due to the small number of completed questionnaires, the results to the open-ended questions were seen as descriptive and preliminary.

Adolescent and Parent Perspectives

Benefits of Group. According to both parents and adolescents, one of the primary benefits of the DBT skills group was learning that they were not the only ones who were struggling. For example, one parent stated that, “I realized that there are other children with similar problems to my child’s problems” while an adolescent commented that, “it was helpful to listen and to relate, and to know that I’m not alone.”

Both parents and adolescents acknowledged that the group environment promoted learning from their respective peers, and was significant in the clarification and application of skills. For example, many participants commented on the opportunity to learn from other group members strategies and to hear how they applied these skills. One adolescent reported that, "it was interesting to have other people share what and how they were using the different strategies and tools to deal with their situation." The group format allowed parents and teens "many opportunities to share specific situations" and to talk about the adaptive skills they that had used to cope with distressing feelings and situations.

Parents indicated additional benefits included the opportunity to share their thoughts/feelings and the support that they received. One mother stated that, "it helped [her] to talk to others and see how other girls relate to their mothers." Another woman shared her appreciation for "the spontaneous sharing of feelings and comfort in knowing that others are frustrated [with their child] too." Parents felt supported by other adults in the group who had children with similar problems, and appreciated opportunities in the group to share their feelings with each other.

These findings are consistent with past qualitative research that revealed a fundamental benefit for clients in DBT skills training was the group environment, specifically gaining the knowledge that they were "not the only ones fighting" (pg. 253), the support they received from peers, and the opportunity to learn from other group members (Cunningham, Wolbert, & Lillie, 2004).

Benefits of Skills. General skill acquisition and application was another noted benefit for both parents and youth. A majority of adults stated that learning

mindfulness skills was valuable. Related to this, they commented on being less reactive and less judgemental. Many parents reported an increased ability to deal more effectively with their feelings, which they attributed to learning emotion regulation skills as well as self-soothing methods (i.e., distress tolerance skills). For example, one woman noted that, "I use the half smile most days as a soothing behaviour." There was also an increase in self-care behaviour in the parent sample. One woman expressed that she now "take[s] more time for me and [does] things that I want to do (e.g., try to find ways to relax)." Parents overwhelmingly agreed that DBT skills had a positive outcome on their relationships, which was attributed in part to more effective communication with their children. One adult participant stated that "I continued to learn how to communicate more effectively with my child … to really listen to her".

Adolescents reported that they benefited from the group experience because they were introduced to new skills and were able to apply these skills to particular problems in their lives. One youth reported that, "I gained skills I never had and was able to apply them." More specifically, youth viewed emotion regulation skills as valuable, and reported that they benefited from a perceived reduction in intense negative emotions and an increased capability to modulate emotions. For example, one teenager stated that she "benefited from this group because it gave [her] tools to help deal and cope with overwhelming negativity." The majority of adolescents commented on a decrease in levels of self-harm behaviour and suicidal ideation (e.g., "I don't think about suicide as an option". Youth commented that DBT skills had a positive effect on their day-to-day functioning (e.g., sleep patterns, school) as well as

their relationships, including "[having] reasonable conversations", "[working] harder at relationships", "[getting] along with people", and having "the ability to stand up for myself."

A minority of participants did not find skills helpful, for example, the acronyms: DEAR MAN, FAST, etc, and parents identified the DBT vocabulary (e.g., big words, language) as a hurdle. This finding is consistent with researchers who have found that DBT clients consistently report that many of the skills are not only hard to apply but difficult to understand (Cunningham Wolbert, & Lillie, 2004).

Parents mentioned that group materials (i.e., handouts, assignments) were helpful and concise; however, errors in the power point slides were noted. They reported being pleased with the explanation of different topics. Parents noted the benefit of having the use of audio material outside group. An interesting idea by one participant was to have, "a tape or CD … made to listen to in the care … [this] would be awesome." Adolescents provided no comments regarding the use of materials.

Areas for Improvement. Participants noted the need to decrease attrition. To this end, motivation and commitment to treatment would need to be strengthened. The use of commitment strategies outlined in the treatment protocol (Linehan, 1993) could be used during the intake assessment to improve treatment completion. Commitment strategies include: (1) selling commitment: evaluate the pros and cons; (2) play the devil's advocate; (3) use foot-in-the-door and door-in-the-face techniques; (4) connect present commitments to prior commitments; (5) highlight the freedom to choose and absence of alternative; (6) shape stronger commitment; (7) the "nothing's wrong" response – what can we do? (Miller, Neft, & Golombeck, 2008;

Miller, Rathus, & Linehan, 2007). Potential obstacles to attending treatment could also be reviewed during the initial meeting with clients, and solutions to these problems could be generated.

Some adolescent clients emphasised the need to increase the amount of processing time in the group in order to discuss personal problems and solutions. One youth expressed her desire for "less structure and more time to discuss what we were personally going through … because what works for one doesn't work for all – working on finding what worked specifically for each girl would have helped." Additional feedback from youth included a need to improve the alliance between youth and group leaders. For example, one youth commented that, "The therapists assumed that their methods were God, and if they didn't work for you it was assumed that you weren't trying or trying hard enough".

Some parents noted that changing the group to an earlier time in the day would be helpful. One woman claimed that the group "was after a long day of work and sometimes I was too tired." A final recommendation was to provide maintenance or graduate groups for adolescents who have completed the group treatment and who wished to "refresh" their skills. Given the high occurrence of relapse among depressed and suicidal adolescents, clinical researchers have recommended either a booster or graduate group (Miller, Rathus, & Linehan, 2007). The goals of adding a graduate group are to improve motivation, encourage skill generalization, provide peer consultation, and decrease the emphasis on the primary therapist in order to create healthy peer support networks. The format is for a specified time period (e.g., 16 weeks), and the youth are assigned as "mindfulness leaders" and the skills

teachers.

Therapist Perceptions

Benefits of Group. There was a great deal of feedback from the therapists who took part in this study. Responses regarding the DBT group were that it was cost effective. Therapists indicated that, "intensive individual sessions are costly … the group staves off such additional costs and provides clinicians some room to time manage other issues." Overall, therapists saw the DBT skills group as "a very important and influential addition to [existing] services at Regina Child and Youth Mental Health Services."

The group environment itself was perceived as beneficial. One clinician, echoing the sentiments of participants said, "My client learned that other youth have similar problems … and it allows the client to feel as though they aren't alone in their struggles." Therapists expressed that the group benefited the parent-child relationship. For example, "[It] allows mother to learn some skills and help with regulation of her interactions with her daughter." Finally, therapists observed gains in individual therapy as a result of group participation (e.g., more calm, increased capacity to "open up", more honesty around therapeutic goals, more clear about issues with emotion regulation).

Benefits of Skills. Therapists observed a decrease in number and severity of crises. According to one clinician, "my client did not experience as many crises during the group period and the crises were less severe." An increase in client's coping skills was noted, specifically an "increase in interpersonal, emotion regulation, and distress tolerance skills, or at least my client has been able to communicate that

her skills have improved in these areas." Related to an increase in adaptive coping skills was a corresponding decrease in self-injurious behaviour. For example, "[my client's] self-injurious behaviour, cutting, has significantly decreased over this year, and she has only cut once in the last four months."

Areas for Improvement. Therapists identified the dropout rate as a problem and the need to increase retention of participants. "Sadly, my client's parents pulled her out of group before integration of skills could occur, and they then withdrew from therapy." Some therapists expressed concerns that clients did not apply the skills and/or minimized the positive effect of skills training. For example, "[My] client could refer to distress tolerance techniques … but did not apply them."

Therapists acknowledged the need for improved communication between therapist and group leaders. Specifically, therapists recommended regularly scheduled case consultation meetings. These meetings are designed to provide emotional support and supervision to the therapist so that he or she can continue to provide help to the teenager and the family (i.e., decrease therapist burnout, increase child-parent-therapist relationship) (Miller, Rathus, & Linehan, 2007). An additional function of these meetings is for group leaders to discuss particular skills that the group members are learning so that the individual therapist can coach/reinforce these skills outside of group and monitor homework.

Additional suggestions by therapists included the need for education and training in DBT. All therapists suggested the need for staff training in DBT skills in order to implement DBT in individual therapy, and that DBT was perceived as a useful modality for working with clients. Training individual therapists in DBT

protocol may increase effectiveness at treatment engagement and retention. For example, if a client is absent from group for unfounded reasons, the therapist can conduct a DBT behavioural analysis in individual therapy to ascertain reasons for behaviour, the consequences, and the solutions that may reduce similar behaviour in the future (Miller, Neft, & Golombeck, 2008).

CHAPTER V: DISCUSSION

The primary purpose of this study was to investigate the effectiveness of a 12-week multifamily DBT skills group as an add-on to non-DBT individual therapy (i.e., TAU) for multidiagnostic suicidal adolescent outpatients with symptoms of BPD. In light of the paucity of empirically validated interventions for this population, there is a fundamental need to develop and assess novel treatments to address in a timely manner the complex symptom presentation. Following the research evidence for the effectiveness of standard DBT for adult outpatients with BPD and the growing evidence for the usefulness of modified DBT programs for multiproblem suicidal adolescents, we hypothesised that adolescent involvement in the DBT skills group would be associated with significant and clinically meaningful reductions in the impairment of BPD symptoms, suicidal behaviour, and labile affect (e.g., depression, anxiety) over a 12-week period. It was also anticipated that participation in a 12-week DBT skills group would be associated with significant improvements in family functioning. It was believed that these respective changes would be maintained over a 3-month follow-up period. Program evaluation measures offered an additional indicator of the perceived usefulness of group treatment. We hypothesised that adolescents, parents, and TAU therapists would rate the skills group highly and perceive services as satisfactory. It was anticipated that the results from this descriptive analysis would provide additional support for the results obtained from quantitative data analyses.

Contrary to our hypotheses, we found no significant improvements in the severity of thinking, emotional, and behavioural patterns associated with BPD-related

problems in living, although small to medium effect sizes were found following completion of the DBT program. This suggests that a 12-week intervention was not enough for these adolescent clients and a longer treatment duration is required to effect any significant change in historical behavioural patterns and/or personality traits. For example, in a pilot study conducted by Hjalmarsson and colleagues (2008) on DBT for adolescents (n = 27), these researchers found significant improvements in borderline symptoms (as measured by the Karonlinska Affective and Borderline Symptom Scale Self-Assessment (KABOSS-S; Andersoon, Forslund, Gustavsson, & Asberg, 2003) as well as large effect sizes (d = 1.15) for the sample as a whole following completion of a modified DBT program. In their ITT analyses, the significant improvements remained and were further strengthened. The differences in findings between the current study and Hjalmarsson and colleagues' study is not startling given that the latter project had a longer treatment duration (e.g., 12 months) and employed a standard and comprehensive DBT treatment protocol. Notable is that the researchers did not include collateral observations of child problem behaviour, which is important because adolescents tend to report greater changes than parents thereby inflating outcomes (Weisz, McCarty, & Valeri, 2006). Based on our findings, it appears that there may be a ceiling to what can be practically changed over a short period of time with respect to historical behavioural patterns and/or personality traits. Hjalmarsson's study provides preliminary support for the notion that treatment interventions may need to be longer and more comprehensive in order to effect significant improvements in BPD.

Pre-post analyses for the sample as a whole showed no statistically significant

improvements in affective instability (e.g., depression and anxiety) on both teen and parent measures. On the other hand, pre-post analyses for treatment completers demonstrated statistically significant improvements in levels of total depression. Medium to large effects were found for a range of domains of depression including interpersonal problems, ineffectiveness, and negative mood. Compared to personality traits, we would expect to see improvements in Axis I symptomatology over this relatively short treatment duration.

An additional goal of DBT skills training is to address the interpersonal chaos associated with BPD. Adolescents did not report any meaningful changes in family discord, and mean scores remained comparatively unchanged across the duration of treatment. According to parent report, however, improvement was observed in basic processes within the overall family system, specifically related to adolescents' involvement and communication at home. Further, treatment effects on child problem behaviour were evident after six weeks of group treatment. One explanation for this is that group cohesiveness—one particular variable associated with treatment benefits in the context of a group (Yalom, 1995)—was cemented in the first half of the treatment group. Certainly, both parents and youth commented on the benefits of meeting and talking with others who shared similar struggles. In contrast to the effects of treatment on problem behaviours, larger treatment effects on aspects of family functioning were observed during the latter half of group. One hypothesis for this is that the DBT module that addresses relationship skills, parent-child discord, and communication were presented during the second half of the treatment group. As such, these skills may have been implemented at a later date in the home environment.

In the current study, the lack of improvements in symptomatology may also be attributed to participants' motivation to change. In the literature, the readiness for change at pre-treatment is strongly related to treatment outcome across different diagnoses (Federici & Kaplan, 2007). Although we did not include in this study a measure to assess motivation to change, past research on DBT (e.g., Federici, 2008) found that treatment completers compared to treatment non-completers were more motivated to change their symptoms as well as demonstrated an increased level of confidence at four assessment time points. These findings suggest that a salient moderator of positive outcome for participants may include motivation to change as well as perceived confidence in one's ability to successfully achieve his or her goals.

In further reflection on how DBT skills group might incur change, we also contemplated the findings that (1) adolescents' demonstrated some improvements in mood lability and (2) they highlighted the usefulness of emotion regulation skills. These results provide possible signs regarding possible methods of change. Lynch, Chapman, Rosenthal, Kuo, and Linehan (2006) theorize that DBT may improve problems with behavioural and affective instability by offering clients more adaptive ways to deal with their internal experiences, emotions, and behavioural urges. Emotion regulation skills are considered change-oriented skills and focus on enhancing one's capability to manage intense emotions. What is interesting, though, is that our findings regarding skill use are not consistent with a previous analysis of behavioural skills used by suicidal adolescents who were receiving 12 weeks of standard DBT (n = 27). In their analysis, Miller, Wyman, Huppert, Glassman, and Rathus, 2000 found that the most highly rated skills included distress tolerance skills

and mindfulness skills, both of which facilitate an acceptance-based approach to experience. This approach is contrary to the control-oriented attempts to fix, control, or contain emotional experiences or situations. In fact, the sample of adolescents in Miller and colleagues' study found mindfulness and acceptance-based skills more helpful than the change-oriented skills, which is contrary to feedback obtained from our sample of adolescents.

Research on DBT skill use among adults found that the usefulness of skills generally varied from client to client; however, patients tended to practice most frequently mindfulness skills, followed by distress tolerance and emotion regulation skills (Federici, 2008). The most commonly used skills included "self-soothe," "distract", and "one-mindfulness" (Cunningham, Wolbert, & Lillie, 2004; Lindenboim, Comtois, & Linehan, 2007). In the current study, comments indicated that mindfulness skills might have been understood and applied by parents more frequently than their children.

Overall, process challenges that occurred during this study (e.g., lack of control condition, attrition, statistical regression, etc.) resulted in a range of threats to experimental validity (internal, external, construct, and statistical conclusion). We cannot rule out the fact that changes may be attributable to maturation, medication, test-retest, selection bias, or other effects. As such, we cannot draw valid and meaningful conclusions from our findings regarding the effectiveness of the treatment intervention, namely that the 12-week DBT group intervention is any more effective than TAU within our site or in similar settings.

The Impact of "Real-world" Research on Treatment Outcomes: Balancing Practicality with Clinical Efficacy

Conditions of a research study can differ extensively. Qualitative distinctions in experimentation (e.g., laboratory versus applied) contain crucial differences for the conditions of a study. These distinctions can be viewed each as a bipolar continuum, that is, with one distinction on the right side of the dimension (e.g., laboratory, analogue, efficacy) and one label on the left (e.g., applied, clinical studies, effectiveness). The distinction between efficacy and effectiveness research is relevant to this discussion given the nature of the current research project. In contrast to clinical research that obtains treatment outcomes under highly controlled conditions (e.g., laboratory space in a psychology department where university students are recruited to participate in manualized treatment with treatment delivery supervised/monitored closely), the aim of applied research is to show what can be accomplished in authentic conditions of daily life and/or of direct clinical relevance (Kazdin, 2003). The current study was conducted in a real-world setting and is, therefore, considered applied research. Specifically, it offered an opportunity to examine how a DBT skills group intervention might be provided in a community-based system of care with clients in an outpatient treatment facility.

A natural consequence of conducting an effectiveness study in the "real-world" is having less rigorous control over facets of the investigation (e.g., typical control procedures are not implemented) (Kazdin, 2003). In this case, less control over the study resulted in an inability to assign participants to different conditions on

a random basis, to vary conditions (treatment and control) as required by the design, and to control sources of bias within the investigation. For example, in spite of the importance of having a non-intervention control group because of threats to internal validity (e.g., history, maturation, testing, etc.), a control condition (e.g., TAU cohort) was not permitted within the clinic. As such, the primary feature of true experiment (e.g., random assignment to groups) was lost. As such, a wait list control group was proposed for this study in order to control for factors that may interfere with drawing conclusions; however, not only were attempts to obtain a control sample unsuccessful due to the lateness of referrals and logistics of scheduling, but it was also seen to be unethical to withhold treatment from youth with life-threatening behaviours (Kazdin, 2003). In the end, the research design was less ideal than preferred. Without a control group, we cannot draw conclusions about the effectiveness of the treatment intervention.

Statistical regression is a threat to internal validity and is an additional factor that impacted our ability to draw valid inferences about our research findings. Participants were selected for this study because they scored within the extreme range on a baseline assessment measure (i.e., the MACI). Based on statistical reasoning, however, participants are predicted to score less extreme on measures upon re-testing. In other words, there is the tendency for extreme scores on any measure to revert towards the mean of a distribution. A no-treatment or wait-list control would have helped to determine if changes in the two treatment conditions were any better than changes without treatment. Changes attributed to statistical regression would have

been shown in the no-treatment group and would have provided a base for evaluating incremental changes associated with the intervention (Kazdin, 2003).

As discussed in previous sections, the loss of participants after the initial session was a significant problem. Attrition has implications for validity and data analysis and, therefore, can be attributed to the pattern of results in this study. Specifically, changes in overall group functioning could be attributed to the loss of participants rather than to the impact of the intervention. In other words, the mean of the dropouts may be dissimilar from the mean of the remainder of the sample, so changes in the mean may results from loss of a select group of participants.

An additional "real-world" complication was related to the dependent variable, specifically treatment delivery, training, and supervision/monitoring. There were limited resources to obtain high quality training in DBT (i.e., Behavioural Technology Transfer Group, BTTG) and no formally scheduled time allotted by management to implement the program (e.g., two days a week). However, the intervention was delivered according to Linehan's treatment manual, which specifies guidelines, goals, themes, the means and end of each group session, including statements of the therapists. Unfortunately, there was no opportunity for close monitoring of treatment (i.e., treatment fidelity); more specifically, to obtain careful assessment by highly trained professional of adherence to treatment (i.e., audio, videotape, direct observation, case supervision). In light of this, regular supervision meetings were implemented and clinicians delivering group treatment had weekly discussions after the skills group to review what was done, how it was done, and

ways in which delivery could be more successful in order to maximize client progress.

Practical aspects of clinical work created problems. In spite of reported interest, TAU clinicians were unable to sanction time to participate in weekly consultation meetings due to demanding caseloads. We did not have access to administrative staff (with or without research experience) on site and, therefore, did not have additional help to track down missing data. Self-report measures and evaluation questionnaires completed at follow-up proved relatively difficult to collect from adolescents and parents as well as TAU clinicians; as such, we were unable to complete some aspects of the intended research.

The setting and conditions under which this study was conducted resulted in a reduced level of scientific control (e.g., process challenges) that impacted significantly the research design of the current study (e.g., lack of control condition) and resulted in various types of threats to experimental validity (internal, external, construct, and statistical conclusion). Thus, this affected our ability to reach meaningful and valid conclusions about the effects of the DBT intervention on the basis of a pre-post research design and analysis. On the other hand, an additional aim of this naturalistic study was to examine practical applicability (Hayes et al., 1999 as cited in Hjalmarsson et al., 2008). In contrast to research-orientated settings, the setting illustrated here more closely resemble the context in which services are provided for the majority of suicidal multidiagnostic youth and their families (i.e., community outpatient treatment clinic).

Acknowledging Multiple Relationships in Research and Practice

An important ethical issue emerged during the course of this study that was related to the multiple roles held by the author. A "dual" or multiple relationship is defined as a therapeutic relationship with a client that also involves a significantly different relationship, such as social, financial, or research-based, with that client (Campbell & Gordon, 2003). The ethical concern associated with a dual relationships is a conflict of interest and/or a reduced ability to be objective and unbiased. The Ethics Code (APA, 2002) warns psychologists against multiple relationships because of the confusing expectations of roles for both client and therapist and the resultant risk of harm; however, when it is unavoidable, psychologists are cautioned to be aware of potential for damaging effects. The harmful effects of dual relationships include a client's inability to have an open and trusting relationship with their psychologist, the biased objective on the part of the psychologist with respect to providing treatment and/or conducting research, and potential exploitation of the client (Peterson, 1996).

From the onset of the current study, I found myself in multiple roles; I was at once scientist, treating clinician, and co-worker to TAU clinicians. As such, I found the following guidelines helpful to manage this circumstance: imagining worst-case scenario; seeking ongoing supervision and consultation; maintaining clear boundaries so that clients' needs took priority over my needs as a psychologist/researcher; maintaining confidentiality; and terminating the dual relationship as soon as possible (APA, 1992). I also consulted the guiding principals (e.g., Respect for the Dignity of Persons, Integrity in Relationships, etc.) in the Canadian Code of Ethics for

Psychologists (CPA, 2000). These guidelines are crucial to the gathering and analysis of research. Additional procedures to address bias or lack of objectivity include the addition of a statement in the informed consent form addressing any potential association of the investigator that is, or could be conceived as, a conflict (Kazdin, 2003).

I was also particularly aware of the participant/client/adolescent-researcher/clinician/adult power imbalance. Attempts to minimise the power nuances in the research process included an emphasis on credibility (Hunter, 1995, in Hertz & Imber, 1995).

> The issue of representation is an important one for the researcher to consider as an issue of how power relationships are reproduced: "How does our writing … reproduce a system of domination and how does it challenge that system? For whom do we speak and to whom do we speak, with what voice, to what end, using what criteria?" (Richardson, 1997, p. 57)

Scholars (e.g., McCotter, 2001; Peshkin, 1998; Weiler, 1998) highlight that subjectivity is inescapable for the researcher, and posit the importance of acknowledging and embracing the role of the self in the research process. To this end, I frequently discussed my experiences with my research supervisor and fellow graduate students (no identities were revealed in these discussions).

Sample Population

Several observations about the sample population merit mention. Results revealed that participants in the current study were overwhelmingly female. This finding is consistent with research on gender differences that suggest that BPD is diagnosed most commonly in women. Approximately 70-77% of psychiatric patients

diagnosed with BPD are female (APA, 2000a; Cunningham, Wolbert, & Lillie, 2004; Skodol, Gunderson, Pfohl, Widiger, Livesley, & Siever, 2002). The high number of female referrals in the current study may be indicative of a significant gender difference between adolescent males and females who are diagnosed with BPD; however, it may also reflect the problem of sex bias in mental health diagnosis (Fall & Craig, 1998) and/or gendered expressions of similar underlying BPD pathology.

Researchers (e.g., Bradley, Zittle Conkin, & Westen, 2005) have attempted to identify gender differences in the borderline personality features that characterize adolescent male and female patients. Results indicated that female adolescent patients were described by North American doctoral-level clinicians as having symptoms similar to those of adults; however, the male portrait diverged considerably from the DSM-IV (even though these criteria were used to select these patients) and was considerably more externalizing than either DSM-IV or the adolescent female composite. Adolescent male patients who met BPD criteria had a more aggressive, disruptive, and antisocial pattern of symptoms. These empirical findings suggest that the nature and/or expression of BPD in adolescents may be gendered, with female adolescents presenting as more internalizing and emotionally dramatic and adolescent males presenting as more behaviourally disinhibited, externalizing, and angry. In the current study approximately 19% of the sample was characterized as having an introversive personality style and 63% as having an inhibited style, which correspond to Schizoid and Avoidant PDs in the DSM-IV, respectively (Millon, 1993). Clinical descriptions of these styles include being interpersonally detached, uncomfortable in social settings, extreme sensitivity to rejection and humiliation, and having a lack of

self-confidence. Further investigation is needed to explore whether or not these are two expressions of similar underlying pathology, or if DSM-IV criteria may lead mental health professionals to misdiagnosis BPD in adolescent males who are more appropriately diagnosed with a disruptive behaviour disorder or antisocial PD. Consequently, clinicians are encouraged to fully understand the impact and role of gender differences in pathology as well as sex bias in working with youth diagnosed with BPD.

Issues that Arise in Skills Groups

There are particular issues that emerge in the context of group therapy that are important for clinicians to consider (Yalom, 2005). For example, should the format of groups be open or closed? There are pros and cons to both closed and open group. In a closed group, one that is developed and continues for a specified period of time, there is the opportunity for group members to develop trusting relationships and, consequently, disclose more information; however, this can also prove disadvantageous because with an increased level of comfort, there comes difficulty in maintaining focus on behavioural skills training—the aim of a DBT skills training group—as opposed to process issues. Hence, it may be more advantageous to add new participants at the beginning of each new module. An open group also provides an opportunity for adolescents who have significant difficulty dealing with change to practice being exposed to change (e.g., junior members) in a controlled yet continual manner. By adding new members at each module while graduating others, a "seniority system" can develop within the group whereby senior members model commitment and skilful behaviours as well as give constructive feedback to more

junior members (Miller, Rathus, & Linehan, 2007).

Typical concerns that occur in group therapy, particularly with adolescents, involve therapy-interfering behaviours such as the risk of contagion and negative modeling, competition for pathology, and re-traumatization (Yalom, 2005). Behaviours that interfere with other clients' hope in, growth in, or compliance with therapy include engaging in threatening behaviours towards other teens, being disrespectful or openly judgmental, making hostile remarks, inducing other clients to engage in destructive behaviours, etc. The concern with encouraging other clients to engage in destructive or non-DBT behaviours is particularly applicable to teens who are strongly susceptible to peer pressure (Miller, Rathus, & Linehan, 2007). Behaviours that interfere with attending therapy include repeated/prolonged hospitalization, cancelling sessions, crises that disrupt therapy, arriving to sessions late or leaving early. Behaviours that get in the way of being attentive in therapy can involve intoxication, excessive tiredness, extreme emotional states, or being highly distractible via doodling, cross-talking, passing notes, giggling, flirting, moving around the room, interrupting. Noncollaborative behaviours may range from not talking or working, lying, giving vague and/or evasive answers. Finally, noncompliant behaviours that interfere with therapeutic progress include not completing homework, not keeping agreements, and/or not engaging in session.

In DBT, reducing therapy-interfering behaviours is a lower-order target in group skills training (versus individual therapy) and increasing behavioural skills is a higher order target in order to reduce the chance of being sidetracked by the many potential therapy interfering behaviours; therefore, mild behaviours are first ignored

while positive attention is intentionally applied at the time the youth indicates reengagement with the group in order to reinforce compliant behaviour (Linehan, 1993b; Miller, Rathus, & Linehan, 2007). Contingency management strategies are employed regularly by skills trainers in an attempt to change behaviours of members. If problematic behaviour occurs over an extended period of time and/or affects negatively either the leaders or other members, such digressions would be dealt with in the following two ways. Group leaders would first address it directly in the group session, clarifying expectations, obtaining commitment to abide by expectations, and modeling interpersonal effectiveness skills by expressing concern and requesting change. The second way would be for the problem behaviour to be addressed in individual sessions where a behavioural analysis would be conducted by the individual therapist (Miller, Rathus, & Linehan, 2007).

Discussion on the Study Evaluation

Results of the study evaluation show that clients who completed the group treatment were satisfied with services and with the overall quality of the group. Furthermore, results highlight particular elements of the group treatment program that contributed to its success. Therapeutic alliance between participants and group facilitators was determined to be high; however, alliance was not correlated significantly with service evaluation. So, what else might have played an essential role in the overall satisfaction with services?

According to participants, we succeeded in developing a group environment that promoted general skill acquisition and application, the opportunity for both adolescents and parents to learn from and share with their respective peers, as well as

receive support. We achieved at teaching our clients new skills to address emotional dysregulation, self-injurious behaviour, impulsivity, and relationship problems. Although clients did not have fewer problems after the group treatment, they indicated an increased capability to manage them.

There were aspects related to implementation of the intervention in a publicly funded mental health organization that may have impeded the overall success of the program. Specifically, there were obstacles related to financial support, limited staff resources, problems getting staff members to buy into DBT, and costly training. For example, clinicians did not commit time to learning the treatment model and participating in a weekly consultation team in spite of expressed interest. Based on informal conversations with these therapists, our impression was that their participation was constrained by the context of the community care setting (e.g., large caseloads, inflexible scheduling). The clinicians and setting in this study are in direct contrast to other programs (e.g., Rathus & Miller, 2002) in which small numbers of extremely well trained staff conducts treatment formally assessed for adherence (i.e., treatment fidelity). Furthermore, the evaluation component of this study suffered from a lack of completed measures. It proved difficult to collect evaluation measures from adolescents, adults, and clinicians, and it would have been helpful to have additional finances to provide on-site staff to help with data collection (e.g., administrative staff).

5.4.1 Study Limitations

The findings from the current study should be interpreted in the context of methodological limitations. First, the absence of a control group threatens the internal

validity of the study (i.e., selection bias or differential regression [to different means]) (Kazdin, 1992), and permitted us to make only associative and theoretical conclusions regarding symptom changes. It is unclear whether treatment outcomes were a result of the intervention alone or whether they were attributable to confounding variables. The lack of a control group means that reduction in symptoms and improvements in functioning may not have been a result of the study intervention but a result of the natural time-course of symptoms, concurrent interventions (e.g., TAU, psychotropic medication), and/or regression to the mean. The sample for this study included multidisordered individuals who did not represent accurately a true random sampling of the population. If baseline scores on symptom measures were extreme compared to the "true" population mean, then less extreme scores on measures at post-treatment (suggesting a downward regression to the mean) would make it seem as through improvements were made (Federici, 2008; Kazdin, 1992). In the current study, variables that were not measured or controlled included the modality and amount of individual therapy, amount of psychotropic medications, and degree to which individual therapists utilized DBT skills in sessions. The current findings could have been significantly influenced by each of these factors and require evaluation in future research.

The use of self-report measures limits the generalizability of findings. Responses to self-report measures may have been influenced by a non-willingness to disclose problems, an inability to remember specific details related to symptom presentation/frequency, and a lack of motivation to complete the measures. Given the limitations of using self-report measures, the use of alternate types of techniques to

assess change could have been selected in light of the purpose of the study. For example, global ratings that reflect overall impressions of the construct of interest are provided by individuals other than the patient who is in a position of expertise (e.g., therapist) and/or familiarity with the client (e.g., parent). Direct observations of behaviour could be conducted in the client's natural environment (e.g., home, school, community), and reduce concerns about external validity of the findings (e.g., whether results generalize to everyday life). Psychobiological measures are designed to assess biological substrates of affect, cognition, and behaviour or the association between biological processes and psychological constructs. Measures address different types of functions (e.g., autonomic system), systems (e.g., cardiovascular), and level of analysis (e.g., brain imaging) (Kazdin, 2003).

Missing data was particularly problematic in this study. Researchers have found that the longer the treatment duration, the greater number of participants is lost because of difficulty with finding them (e.g., address changes, name change, etc.) and/or cooperation with solicitations for follow-up (Phillips, 1985). In spite of significant and sustained efforts by the research team to assess all participants at each of the four assessment periods, some of the individuals were difficult to locate, did not attend schedule appointments, and/or did not return measures. Compliance with requests for assessment data have been found to vary between patients as a function of their perception of treatment, their relationship with clinical staff, and the perceived benefits received from participation in the treatment (Kazdin, 2003).

The current study was hampered by the small sample size. Other studies on adolescent DBT treatment have also yielded small sample sizes ranging from as few

as 10 participants (Rathus & Miller, 2002) to 16 adolescent female (James, Taylor, Winmill, & Alfoadari, 2008). Larger scale randomized controlled trials are needed to assess the efficacy of DBT skills training for adolescents in order to provide more definitive statements with respect to treatment effectiveness on self-harm, suicidal tendencies, and BPD symptoms.

A potential source of error could be attributed to researcher bias such as experimenter bias and systematic errors. Attempts were made to mitigate this potential bias, and included meeting with the dissertation committee, consulting as needed with experts in this area, and making conservative decisions regarding statistical analyses.

5.2 Conclusions

There is a paucity of efficacious treatment interventions for multidiagnositic suicidal adolescents with BPD symptoms. The current study results can provide important information regarding the development and implementation of effective treatment services for this complex and underserved population. In light of the fact that self-injurious and suicidal behaviours are often typical exclusions for entry into many specialized treatment programs for MDD, this DBT skills intervention may be a crucial first-line intervention for this particular patient population. Provided prior to involvement in MDD programs, an add-on DBT skills group may offer participants the opportunity to manage more effectively their suicidal and self-injurious behaviours (e.g., greater positive coping) and, thereafter, focus on gaining control over their MDD symptoms.

These results have implications for treatment delivery and health care costs.

BPD is linked with more frequent use of mental health resources, repeated hospital admissions, and greater treatment demands (Linehan, 1993a); therefore, a DBT skills group could provide organizations with a cost-effective treatment option. Studies examining resources associated with DBT programs have demonstrated consistently reduced costs related to a reduction in the number of acute care services that are accessed (Comtois, Elwwod, Holdcraft, Smith, & Simpson, 2007; Linehan, 1993). Implemented as an adjunct to outpatient mental health care services, this DBT skills group intervention would offer service providers a more cost-effective treatment resource.

In sum, these preliminary results provide data regarding the use of a 12-week DBT skills group as a adjunct intervention to non-DBT individual therapy for suicidal and self-injurious adolescents with BPD and comorbid disorders. Results from this study lay the foundation for future larger scale clinical trials for this patient population.

5.3 Areas for Future Research

In light of future evaluation of the DBT skills group, several changes to the current research project (i.e. intervention group) could be made. Given the ethical issues associated with a waiting-list control group (e.g., delaying treatment may have significant implications for clients requiring immediate treatment) (Kazdin, 2003), a "treatment-as-usual" control group could be utilized whereby specific modalities, therapy techniques (e.g., cognitive behaviour therapy, emotion focused therapy, family therapy), and number/length of sessions could be measured. A non-specific-treatment control group addresses threats to internal validity (history, maturation,

repeated testing) as well as on threats to construct validity (e.g., non-specific factors of psychotherapy).

An important issue to consider when implementing a group therapy program is age. Adolescents, ranging from 12 to 19 years of age, are a heterogeneous group. Early, middle, and late adolescence are phases characterized by somewhat different developmental tasks, pressures, and responsibilities. Given the diversity among age subgroups, it is important to consider if inclusion decisions should be based on age, and/or level of functioning. Referral limitations or other practical reasons may prevent some service providers from turning away adolescents outside a specific age range and/or running different groups, each limited to specific ages (e.g., 12-15, 16-19, etc.) (Miller, Rathus, & Linehan, 2007).

Lack of treatment attendance and problems with adherence are mammoth problems in child therapy. Of families that participate in treatment, ½ terminate prematurely (Nock & Kazdin, 2005). Poor attendance and adherence have been linked to negative outcomes for families (e.g., poorer outcomes), clinicians (e.g., reduced levels of staff productivity, decreased cost-effectiveness) and researchers (e.g., sampling bias, reduced power, limited generalizability of results (Armbruster & Kazdin, 1994). Controlled studies have examined methods for increasing attendance and adherence to child therapy, and have shown success by using pretreatment preparatory interviews (e.g., Day & Reznikoff, 1980) and improving methods of engaging families (e.g., Szapocznik et al., 1988). In addition to these early successes, researchers have found that patients fail to attend or adhere to therapy because of low levels of motivation (Miller & Rollnick, 2002) and/or barriers (e.g., lack of

transportation, poor relationship with therapist or other group members) (Kazdin, Holland, & Crowley, 1997). In light of research on motivational enhancement techniques (e.g., Miller & Rollnic, 2002) and on barriers to treatment participation (e.g., Kazdin et al., 1997), future endeavours to increase motivation for, and/or to identify/remove barriers to, treatment could involve the implementation of a brief initial treatment orientation. During this orientation, content and duration of treatment as well as details of the research project could be discussed with families. Parents could be offered information on the significance of attendance and adherence. They could be encouraged to identify motivational statements about attendance/adherence and develop strategies to overcome barriers to treatment (Nock & Kazdin, 2005).

An increased incidence of affective symptoms has been revealed for parents of suicidal adolescents. Recent research (Woodberry & Popenoe, 2008) has used parental outcome measures (e.g., the Beck Depression Inventory, BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) in addition to adolescent self-report measures to address the changes in parental pathology. More research is needed to explore treatment gains with the parents who receive DBT intervention by obtaining reports of parental change along with adolescent change (Sunseri, 2004).

Results of the current study indicated that externalizing problems were prevalent in the sample, including ADHD, ODD, and CD behaviours. Over the last decade there has been increasing attention paid to the effectiveness of DBT with various populations. More specifically, researchers have begun to explore the effectiveness of DBT with adolescents diagnosed with ODD. Past research has indicated that adolescents with CD, although dysregulated and impulsive, may be

poor DBT candidates due to their ability to reflect on behaviour and to experience some remorse or regret (Sunseri, 2004). More recent research (e.g., Nelson-Gray, 2006) has found that using a modified form of DBT with youth diagnosed with ODD (n = 32) was effective in decreasing negative behaviour and increasing positive behaviour. Consequently, an area for future research could be the further exploration of the potential applicability of DBT to adolescents with conduct-related features.

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APPENDICES

APPENDIX A
DIAGNOSTIC CRITERIA

DSM-IV-TR Diagnostic Criteria for Borderline Personality Disorder
A pervasive pattern of instability of interpersonal relationships, self-image, and affect, and a marked impulsivity beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:
1. Frantic efforts to avoid real or imagined abandonment.
2. A pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation.
3. Identity disturbance: markedly and persistently unstable self-image or sense of self.
4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating.
5. Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour.
6. Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days.
7. Chronic feelings of emptiness.
8. Inappropriate, intense anger or difficulty controlling anger.
9. Transient, stress-related paranoid ideation or severe dissociative symptoms.

APPENDIX B
ETHICS BOARD APPROVAL

UNIVERSITY OF REGINA

OFFICE OF RESEARCH SERVICES

MEMORANDUM

DATE: May 22, 2007

TO: Megan Tuttle
Psychology

FROM: K. Arbuthnott
Chair, Research Ethics Board

Re: Evaluation of a Family & Adolescent Skills Training (FAST) Group for Use with Multi-Problem Adolescents in an Outpatient Community Mental Health Setting (75S0607)

Please be advised that the University of Regina Research Ethics Board has reviewed your proposal and found it to be:

☑ 1. APPROVED AS SUBMITTED. Only applicants with this designation have ethical approval to proceed with their research as described in their applications. For research lasting more than one year (Section 1F). **ETHICAL APPROVAL MUST BE RENEWED BY SUBMITTING A BRIEF STATUS REPORT EVERY TWELVE MONTHS**. Approval will be revoked unless a satisfactory status report is received. Any substantive changes in methodology or instrumentation must also be approved prior to their implemenation.

Please send revised consent & assent forms for your file.

☐ 2. ACCEPTABLE SUBJECT TO MINOR CHANGES AND PRECAUTIONS (SEE ATTACHED). Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB.** Do not submit a new application. Once changes are deemed acceptable, ethical approval will be granted.

☐ 3. ACCEPTABLE SUBJECT TO MAJOR CHANGES AND PRECAUTIONS (SEE ATTACHED). Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB.** Do not submit a new application. Once changes are deemed acceptable, ethical approval will be granted.

☐ 4. UNACCEPTABLE AS SUBMITTED. The proposal requires substantial additions or redesign. Please contact the Chair of the REB for advice on how the project proposal might be revised.

Dr. Katherine Arbuthnott

c. R. Shercliffe, M. Hampton, Luther, supervisors

**supplementary memo should be forwarded to the Chair of the Research Ethics Board at the Office of Research Services (AH 505) or by email to research.ethics@uregina.ca

APPENDIX C
REFERRAL INFORMATION

Overview and Description:

Adolescent clients and their family members are being invited to take part in the Family & Adolescent Skills Training (FAST) Group, which is designed to help adolescents and their families learn how to cope with difficult emotions and behaviour, problematic relationships, stress, and hard times. The group is based on the principles of DBT (DBT; Linehan, 1993) and modelled after other successful DBT programs adapted for use with adolescents and their families—such programming has been supported by research evidence (Katz et al., 2000; Katz et al., 2002; Miller et al., 1996; Miller et al., 2000; Rathus & Miller, 2002). This program will be held at Regina Child and Youth every week for a total of 12 weeks; group sessions will be two hours in length. The group leaders are Bonnie Young, Mental Health Therapist, Child and Youth Services, and Megan Tuttle, Psychometrician, Child and Youth Services.

Focus of Group Sessions:

- Psycho-education on vulnerability to emotion and behaviour dysregulation and treatment-interfering behaviours;
- Skills training in the following four areas: core mindfulness, interpersonal effectiveness, emotion regulation, distress tolerance skills;
- Discussion around integration and application of skills (e.g., skill acquisition and strengthening).

Treatment Objectives:

- Increase clients adaptive skill-base in order to deal more effectively with problematic situations and painful emotional states;
- Increase core mindfulness skills (wise mind), interpersonal effectiveness skills (establish and achieve adaptive interpersonal goals and skills), emotion regulation skills (effectively deal with emotions and decrease their disruptive potential), and distress tolerance skills (effectively handle distressing circumstances and reduce maladaptive reactions);
- Augment client awareness of therapy interfering behaviours and maladaptive coping skills.

Inclusion Criteria:

- Clients between the ages of 13-18;
- Symptoms including:
    - Behavioural dysregulation (marked impulsivity and risk-taking behaviour, threatening others, substance abuse, risky sexual behaviour, running away, gambling, binge eating, spending, etc.);
    - Emotional dysregulation (unstable moods; intense and inappropriate emotions);
    - Interpersonal chaos (unstable relationships and poor interpersonal skills, inability to manage conflict);

- Cognitive dysregulation (confusion about self and goals);
- Recurrent suicidal ideation, parasuicidal behaviour (self-harm/self mutilation), or suicide attempts.

Exclusion Criteria:

- Severe cognitive impairment, severe learning disability, severe receptive or expressive language disorder, or Mental Retardation;
- A comorbid diagnosis of a psychotic disorder, thought disorder, or bipolar mood disorder;
- Clients who are currently engaged in severe substance abuse:
  - If substance use is a current concern, clients must consent to refraining from substance use during group sessions;
- Clients who have a history of demonstrating clearly hostile, aggressive, or threatening behaviours towards other clients or staff in a treatment setting.

Group Evaluation Research:

In addition to co-facilitating the FAST Group, Ms. Tuttle is doing a study on the effectiveness of the FAST Group for use with adolescent clients and their family members. Ms. Tuttle is also a Ph.D student at the University of Regina and would like to use the group outcome information for her dissertation. The clients would be asked to complete several brief questionnaires at the beginning of sessions 1, 6, & 12, in order to monitor client symptoms and progress. Also, she will ask to contact clients at three months following group completion to find out how well their life has been going, as well as what successes or difficulties they might be experiencing. She will also ask clients at that time to fill out a questionnaire about what he or she liked or didn't like about the group. Any information gathered in the intake assessment interview, treatment process, and follow-up evaluation is strictly confidential and will be used for research purposes only by the researchers involved with this project. It will not be shared with anyone other than the adolescent and their family member unless written permission is granted to share information with other health care providers. All personal information used for the purpose of treatment evaluation will be made anonymous and it will not be possible to identify you or your adolescent in any evaluation research reports that will be generated.

NOTE: Refusal to take part in the evaluation componenet *will not* affect the client's ability to participate in the group.

Referral Process:

If the adolescent appears to meet the inclusion criteria for the group treatment program, the referral form should be completed by the referring clinician and then submitted to the treatment group leaders (Bonnie Young or Megan Tuttle). The group facilitators will arrange a two-hour pre-group screening interview with the adolescent client and their family member. At that time, an informed consent will be reviewed and discussed with the client regarding participation in the pre-group screening assessment, the 12-week treatment group, and the outcome evaluation (e.g., completing brief questionnaires related to mood and functioning at three times during

the group).

Group Date and Time:

Group sessions will be held at Child and Youth Services on Tuesday evenings from 6:00-8:00 p.m., starting on X and ending on X (for a total of 12 weeks).

Therapist Consultation Group:

A one-hour weekly DBT therapist consultation group will be implemented for the duration of the FAST group. Similar to Linehan's therapist consultation group, the aim of this group is to increase treatment fidelity as well as to enhance therapist motivation and capabilities in treating more effectively the multi-problem client. The group leaders would facilitate these meetings. Please indicate on the referral form if you are interested in attending these meetings.

Referral Form

Date:	
Client Name:	
D.O.B.:	
Parents:	
Referral Source:	

Client meets the following criteria: Please check all that apply

- ❑ Client is between 13-18 years of age
- ❑ Presenting problem or reason for referral: _____

_____

___

- ❑ Family Skills Group was discussed with adolescent and family member
- ❑ Clinician is interested in attending the weekly Therapist Consultation Group

Axis II Symptoms:

- ❑ Emotional dysregulation (e.g., unstable moods, intense and inappropriate anger, etc.)
- ❑ Behavioural dysregulation (e.g., marked impulsivity, self-destructive and risk-taking behaviour such as risky sexual behaviour, substance abuse, threatening others, running away, gambling, binge eating, out-of-control spending, etc.)
- ❑ Problems with interpersonal relationships (e.g., interpersonal chaos, inability to manage conflict, poor social skills, etc.)
- ❑ Cognitive dysregulation (e.g., confusion about self and goals.)
- ❑ Recurrent suicidal ideation, impulses/attempts, and/or self-harming behaviour
- ❑ Client *does not* present with mental retardation or severe cognitive impairment

Axis I Symptoms:

- ❑ Mood disorder (major depression or dysthymia)
- ❑ Anxiety disorder (generalized anxiety, post-traumatic stress disorder, etc.)
- ❑ Substance use/abuse
- ❑ Client *does not* present with bipolar mood disorder or thought disorder

APPENDIX D
CONSENT FORM

Project Title: Evaluation of a Family and Adolescent Skills Training (FAST) Group

Student Researcher: Megan Tuttle, M.A., Psychometrician, Child and Youth Services, RQHR,
(766-6777) & Student Supervisor: Regan Shercliffe, Ph.D., University of Regina (585-5216).

Introduction: You and your adolescent are being invited to take part in the Family & Adolescent Skills Training (FAST) Group, a 12-week educational program. Your adolescent was referred to the group because she or he is having difficulties with managing emotions and relationships, as well as distressing circumstances. The purpose of the group is to help your adolescent learn skills to cope better with difficult emotions and behaviour, problematic relationships, stress, and hard times.

Purpose: If you agree to take part in the FAST Group, we would like to invite you to participate in the current study. The purpose of this study is to evaluate the effectiveness of the FAST Group and, specifically, help us gain a better understanding of why and how the FAST Group is helpful for you as well as other adolescents and their families who take part in the FAST Group at Child and Youth Services, Regina Qu'Appelle Health Region (RQHR).

Voluntary Participation: Participation in this study is entirely voluntary, so it is up to you to decide whether or not to take part in this study. Before you make a decision, though, it is important for you to understand what the research involves. This consent form will tell you about the study, the purpose of the research, what will happen during the study, and the possible risks, and benefits. If you do decide to take part in this study, you will be asked to sign this form. Even after signing the informed consent form, you can choose to drop-out at any time, refuse to answer any questions, as well as request that the information collected not be used. Lack of participation will not result in any negative consequences for the care your adolescent currently receives. Also, you can participate in the FAST Group without being part of the evaluation research.

Who is conducting the study: The Social Sciences & Humanities Research Counsel (SSHRC) is sponsoring the current research project and the Principle Investigator has received financial compensation from the sponsor (SSHRC). You are entitled to request any details concerning this compensation for the Principle Investigator.

Specific Procedures: Before beginning the FAST Group, you will be asked to read and sign this information and consent form. Also, you and your adolescent will be invited to come to an interview at Child and Youth Services to meet with the group facilitators, Megan Tuttle and Bonnie Young, and to see if the group is right for you. If you decide to join the group, you and your adolescent will be asked to fill out several brief questionnaires at three points during the group treatment (sessions 1, 6, & 12), as well as at three months following the completion of group. Each of these

procedures are discussed more in-depth below. Also, you will be asked permission for the primary researcher to review your adolescent's charts and clinical records (for hospital admissions, suicide attempts, etc), as well as to discuss information regarding your adolescent with his or her primary treatment team.

(A) Intake Assessment Interview: Before the assessment, we (the group facilitators) will look at any background information given to us with the referral. We would then like to meet and talk with you and your adolescent to see whether the FAST Group is a good option for you. We will ask you and your adolescent questions about his or her mood, relationships, coping strategies, and problem areas. It will also give us a chance to review and discuss the group rules, the treatment approach, as well as your goals and expectations. This meeting takes approximately two hours to complete.

(B) Treatment Group: The FAST Group meets for two-hours once a week for a total of 12 weeks. Both you and your adolescent will be asked to sign a treatment agreement at the beginning of the first group session. Limits to confidentiality will also be reviewed at that time. During the group, you and your adolescent will be asked to take about 20-30 minutes at sessions 1, 6, & 12 to fill out some questionnaires related to symptoms and progress in the group treatment.

It is recommended that your adolescent continue to see his or her individual therapist while they attend the FAST Group to give them extra support and service. It is sometimes helpful to discuss your adolescent's progress with his or her primary health care provider at Regina Child and Youth Services. You will be asked to sign a release of information form giving us permission to share this information among members of the adolescent's treatment team.

(C) Follow-Up Evaluation of Services: You and your adolescent will be asked to fill out a questionnaire related to your satisfaction with the FAST Group as well as several brief measures of current symptoms at three months following completion of the group treatment. Each questionnaire requires approximately 15 minutes to complete.

Benefits: No direct benefit can be guaranteed to your child. However, it is hoped that this program will be helpful to young people who have difficulty with emotions, behaviour, and relationships. It is expected that the programme evaluation research will offer valuable ideas and suggestions about whether and how this group is effective and that the information learned in this study can be used in the future to benefit clients with similar difficulties.

Risks: There are no anticipated risks.

Confidentiality: Any information gathered in the intake assessment interview, treatment process, and follow-up evaluation is strictly confidential and will be used for research purposes only by the researchers involved with this project. It will not be

shared with anyone other than you or your adolescent unless written permission is granted to share information with other health care providers. All personal information used for the purpose of treatment evaluation will be made anonymous, and although the researchers will every attempt to ensure that it will not be possible to identify you or your adolescent in any evaluation research reports that will be generated, it is important to note that because other youth are involved in the research study, the researchers may not be able to control what other participants reveal. Clients will be assigned a participant number immediately upon entering into the program and this number will be used to identify participants in all future paperwork. Further, analyses will be transformed into summary data, thus preventing the identification of participants.

Contact Information:

If you have any questions, feedback or comments about the research study or the results of the research study, please feel free to contact the Principal Investigator, Megan Tuttle at (306) 766-6777 (e-mail: tuttle1m@uregina.ca), or her direct supervisor, Dr. Regan Shercliffe at (306) 585-5216 (e-mail: regan.shercliffe@uregina.ca).

The Research Ethics Board of the Regina Qu'Appelle Health Region has approved of this project. If you have any questions or concerns about your rights as a research participant, you may contact Dr. Elan Paluck, Chair of the Research Ethics Board at (306) 766-5451.

Participant Consent to Participate:

- *I have read and understand the information provided for the study as described herein.*
- *I have had the opportunity to have my questions answered.*
- *I agree to participate as well as permit my child to participate in this study.*
- *I agree to allow my child's treatment team to share my child's information with the principle researcher.*
- *I understand that I am not giving up my legal rights as a result of signing this consent form.*
- *I have been given a copy of this form.*

- *I AGREE TO PARTICIPATE IN*
- *(1) an intake assessment interview;*
- *(2) the FAST group treatment;*
- *(3) the evaluation of group outcomes;*

_____ _____

(Printed name of participant) Signature of Participant

_____ _____

(Signature of Witness) (Date)

_____ _____

(Signature of principal investigator/designated representative-if applicable) (Date)

Assent Form

Project Title: Evaluation of a Family & Adolescent Skills Training (FAST) Group

Student Researcher: Megan Tuttle, M.A., Psychometrician, Child and Youth Services, RQHR, (766-6777) & Student Supervisor: Regan Shercliffe, Ph.D., University of Regina (585-5216).

You are being invited to join a study to see how useful the Family & Adolescent Skills Training (FAST) Group is in helping adolescents and their families learn to cope with difficult emotions, problematic relationships, stress, and hard times.

What is the purpose of the study? The purpose of this study is to find out if the FAST Group is useful for adolescents and their families. Before you agree to participate, we would like to give you some information about what's involved with this research.

What will I be asked to do?
(1) You and your parent will be asked to read and sign an informed consent form. You will also be invited to meet with the group facilitators, Megan Tuttle and Bonnie Young, to talk about yourself and help us learn more about you and your family. You will be asked questions about things like how you are feeling, your relationships, how you deal with stress, and difficult times. We will also want to ask you about these things at different times in the future. (2) We will want to know how your life is going and how you are feeling while you are participating in the group. You will be asked to complete brief questionnaires at three sessions (1, 6, & 12) during the course of the 12-week group. (3) Also, we will ask to contact you at three months after the group to find out how well your life has been going, as well as what successes or difficulties you might be experiencing. We will also ask you to fill out a questionnaire about what you liked or didn't like about the group.

Are there any risks involved with this program? No, we don't think that there are any risks involved with your taking part in this study.

What are the benefits of participating in this study?
We believe you will learn skills that may help you cope with difficult emotions, relationships, and tough situations. Your participation will help us understand how youth think and feel after being a part of the FAST group. This information will help us make better programs that help youth deal with the problems that they face at home, school, and in the community.

Will my participation be confidential?
The information we collect about you is very personal. It is important to us to keep the things you tell us strictly confidential. This means that we do not talk to anyone else about what you tell us. When you fill in questionnaires, we don't put your name on the paper. Rather, we give you a number that is associated with your name, which is how we keep track of the information that we collect. All of the information that

we have collected will be stored in a locked cabinet at Child and Youth Services for five years after the end of the study, after which the information will be destroyed via shredding.

Sometimes, youth tell us about really serious problems that their parents might not know about. If the problem is so serious that someone might get hurt, it is our responsibility to talk with the youth's parents about the problem and/or to report the problem to the appropriate authorities. It is our responsibility to make sure that these youth are safe and taken care of at all times. If we need to talk with someone else, though, we will talk with you about it first and explain the importance of sharing this information with someone else.

Do I have to participate?

No. Your participation in the study is voluntary. That means you can stop coming to the group at any time, you can refuse to answer any questions, and/or you can ask that the information that we collected be not used. No one will be mad if you decide to not participate, or decide to stop participating before the study is over. It is your choice. You can join the FAST Group without having to take part in the evaluation.

Who should I talk to if I have any questions?

If you have any questions or comments about the study you can contact the researcher, Megan Tuttle at (306) 766-6777 (e-mail: tuttle1m@uregina.ca), or her direct supervisor, Dr. Regan Shercliffe at (306) 585-5216 (e-mail: regan.shercliffe@uregina.ca).

If you have questions about your rights as a participant in the study, you may contact the Research Ethics Board of the Regina Qu'Appelle Health at (306) 766-5451.

Participant Consent to Participate:

I have had a chance to read the information provided for the study.

I have had all of my questions answered.

I understand that it is my decision as to whether or not I want to participate in the study.

I have been given a copy of this form.

I consent to participate in

(1) an intake assessment interview;
(2) the FAST group treatment;
(3) the evaluation of group outcomes.

_____ _____
(Signature of participant) (Date)

_____ _____
(Signature of participant's legally acceptable representative) (Date)

_____ _____
(Signature of Witness) (Date)

_____ _____
(Signature of principal investigator/designated representative-if applicable) (Date)

Treatment Agreement

Format of Group Session:

- Session starts with "check-in"
- Hour One: Group members share practice efforts and review homework
- 15 minute break
- Hour Two: New skills are presented by group leaders; skills will then be discussed among group members
- Session ends with "check-out"

Group Rules and Expectations:

- Clients who drop out of group will be refused re-entry into the group.
- Clients who are late or absent are encouraged to call ahead of time.
- Clients should not attend group sessions under the influence of alcohol or drugs.
- Information shared during group sessions must remain confidential.
- Clients are discouraged from discussing past or current self-harming behaviour with other group members outside of sessions.
- Clients are discouraged from forming intimate relationships with other group members.
- During the group, each participant is expected to remain in on-going psychotherapy with his or her primary mental health clinician.
- The group leaders may discuss details of group treatment with other members of the client's treatment team (e.g., therapist, psychiatrist, etc.). Note: Clients will be informed of the intent to share clinical information.

Treatment Agreement:

Youth and Parent Clients	**Group Leaders**
I understand that my involvement in the group is voluntary and that I can chose to discontinue treatment at any time. I am aware that the success of the group depends on my co-operation. Therefore, I agree to attend and participate actively in the group sessions as well as adhere to the aforementioned group rules and expectations. If suicidal or self-harming behaviours are present, I agree to work on reducing these behaviours. Further, I will cooperate with group leaders with respect to safety plans and assessments where necessary. YOUTH SIGNATURE	An orientation to the treatment group will be provided during the intake assessment interview and at the first group session. If a client chooses to leave the group prior to program conclusion, we will arrange to speak with your primary mental health clinician. We agree to make reasonable efforts to provide a safe environment via safety plans and, when necessary, assessments. We will endeavour to help the client learn alternatives to suicidal or unsafe behaviour. GROUP LEADER
PARENT SIGNATURE	GROUP LEADER
DATE:	DATE:

APPENDIX E
EVALUATION MEASURES

Client Satisfaction Survey

How many sessions did you attend?
How did you benefit from attending the FAST Group?
What did you find most helpful about the group process or materials presented?
What did you find least helpful about the group?
What do you think could be improved in the group?
Please list any behavioural changes that you've made since attending the FAST Group:

	Strong. agree				Strong. dis-agree
1. I attended more than half the sessions (more than 8).	1	2	3	4	5
2. I found the material and handouts helpful.	1	2	3	4	5
3. The group sessions were very helpful and useful.	1	2	3	4	5
4. My individual therapist did not agree with what I was taught.	1	2	3	4	5
5. The skills I learned continue to be helpful.	1	2	3	4	5
6. Skill cards helped me talk about my problems to others.	1	2	3	4	5
7. After the group, people say I have fewer problems.	1	2	3	4	5
8. After the group, I have been much less likely to harm myself.	1	2	3	4	5
	Too little				Too much
9. Amount of materials	1	2	3	4	5
10. Time to discuss my intense emotions	1	2	3	4	5
11. Length of sessions	1	2	3	4	5
12. Number of sessions	1	2	3	4	5
13. Time provided to learn new skills	1	2	3	4	5

Therapist Satisfaction Survey

How would you compare your experiences working with the client before and after their involvement in the FAST Group?
What effects (if any) did you observe the group having on your client?
Did you observe a decrease in maladaptive coping (e.g., self-injurious behaviour)? If so, how?
Have you observed any increase in client's coping skills in individual therapy: ➢ Interpersonal Skills ➢ Emotional Regulation ➢ Distress Tolerance
What is your general feeling that the DBT approach used in the FAST group would be effective in individual therapy?
How does the group complement or provide a useful addition to the existing services at Child and Youth for clients with regulation problems?
What do you think could be improved about the group?
Comments and suggestions?

	Strongly agree				**Strongly disagree**
1. Group training was clear and understandable.	1	2	3	4	5
2. The group materials and handouts were helpful.	1	2	3	4	5
3. I felt that individual therapy during and following my client's participation in the group was beneficial.	1	2	3	4	5
4. My client learned new skills that were helpful.	1	2	3	4	5
5. My client is coping better with his/her problems.	1	2	3	4	5
6. My client is less likely to harm himself/herself.	1	2	3	4	5
7. Skills teaching and information given to clients is helpful.	1	2	3	4	5
8. I have fewer interpersonal problems with this client in therapy.	1	2	3	4	5
9. Overall, I feel that this group was helpful to my client.	1	2	3	4	5
	Too little				**Too much**
10. Amount of materials	1	2	3	4	5
11. Length of sessions	1	2	3	4	5
12. Number of sessions	1	2	3	4	5
13. Time provided to learn new skills	1	2	3	4	5
14. Time provided to group members to discuss their intense emotions	1	2	3	4	5

Working Alliance Inventory – Short Form (Tracey & Kokotolvic, 1989)

	Strongly Disagree						**Strongly Agree**
1. There is agreement about the steps taken to help improve the client's situation.	1	2	3	4	5	6	7
2. There is agreement about the usefulness of the current activity in therapy (i.e., the client is seeing new ways to look at their problems).	1	2	3	4	5	6	7
3. There is a mutual liking between the client and therapist.	1	2	3	4	5	6	7
4. There are doubts or a lack of understanding about what participants are trying to accomplish in therapy.	1	2	3	4	5	6	7
5. The client feels confident in the therapist's ability to help the client.	1	2	3	4	5	6	7
6. The client and therapist are working on mutually agreed upon goals.	1	2	3	4	5	6	7
7. The client feels that the therapist appreciates him/her as a person.	1	2	3	4	5	6	7
8. There is agreement on what is important for the client to work on.	1	2	3	4	5	6	7
9. There is mutual trust between the client and the therapist.	1	2	3	4	5	6	7
10. The client and therapist have different ideas about what the client's real problems are.	1	2	3	4	5	6	7
11. The client and therapist have established a good understanding of the changes that would be good for the client.	1	2	3	4	5	6	7
12. The client believes that the way they are working with his/her problem is correct.	1	2	3	4	5	6	7